

# AMERICAN VETERINARY REVIEW,

JANUARY, 1891.

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## EDITORIAL.

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**ACTINOMYCOISIS IN THE UNITED STATES.**—The cases in the West—discussion in the *Breeders' Gazette*—legal action in the matter—the discussion of the subject probably closed, as merely of home importance—renewal of its importance—possibly of an international nature—Professor Grandeau's so-called discovery—America is full of the disease—our inspection of cattle illusory and inefficacious—the work of the Bureau of Animal Industry almost ignored—Professor Grandeau's error—does it not call for Dr. Salmon's action, and notification abroad of the new regulations of the Department of Agriculture? **KOCH'S CURE FOR TUBERCULOSIS DISEASES.**—Not much more known to-day than at the beginning—scientists still of different opinions—ought not experiments have been made upon cows—Pasteur experimented on dogs for rabies, why not Koch on cows? **"BACTERIOLOGICAL WORLD."**—A new journal—welcome and good success for it and our friend, Dr. P. Paquin, the worthy editor.

**ACTINOMYCOSIS IN THE UNITED STATES.**—Our readers will remember that in our issue of April last we reported that a number of cases of actinomycosis had been detected in one of the large Western cattle gatherings, and that much excitement had been caused by the action of the authorities, by whom the destruction of the entire carcasses of the affected animals had been ordered. This was followed by a long and interesting discussion, in which a number of the veterinarians who had been consulted in the matter participated, and which was published in extenso in the pages of that most excellent agricultural paper, the *Breeders' Gazette*. The subject developed such an amount of interest, and the opinions expressed were so much at variance, that it ought not to be considered

surprising if the public should hear of some legal action instituted by parties who have suffered pecuniarily by the slaughter and destruction of the diseased cattle. We believe indeed, that the law has already been invoked, and that in the words of one of our friends, "it is certain that we shall soon witness one of the most interesting and expensive law suits that has ever been brought before a court of justice." Yet still the cases of actinomycosis of last April may be considered closed, as respects the interests of the general public, and the question may be looked upon as simply one of seeking redress for alleged private pecuniary damage. If however, we take into consideration certain inquiries which have arisen in this vicinity, and also certain statements which we have noticed in some of our exchanges, it seems possible that the Peoria and Chicago actinomycosis cases are not likely to remain a subject of economic importance at home only, but on the contrary, may become the topic of an international diplomatic discussion of a somewhat serious nature, as indicated in a dispatch printed in one of the New York journals. This despatch is from Paris, under date of the 22d of November, and contains the statement that "Professor Grandeau, Governmental Cattle Inspector, claims to have *discovered* a disease of cattle, transmissible to man, which he calls actinomycosis, and which exists principally in America." That Professor Grandeau has seen actinomycosis in France is not surprising, but the affirmation that this disease exists principally in this country strikes us as being a statement which is open to serious objections. Can it be that the gentleman is making haste to take advantage of the notoriety and clamor attendant upon the Peoria and Chicago cases? Possibly—and especially is this impression of ours strengthened by his further remarks that "the inspection of cattle does not exist, *de facto*, in America, and is, to say the least, illusory and inefficacious. Meats imported from this country [the United States] are altogether unwholesome and unfit for food." All this is as easy to say as it is difficult to prove. Though young in its organization and comparatively recent in its experience, our sanitary service is not as bad as Professor Grandeau seems desirous to

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represent it. Our inspection of meat may not yet be equally perfect with that of old Europe, yet still, imperfect as it may be, it will not allow meat infected and infested with actinomycosis, or cattle showing sign of the disease, either to be sent abroad or eaten at home. The work of the Bureau of Animal Industry in stamping out pleuro-pneumonia from the United States demonstrates clearly enough that the important American trade in food animals is not to be jeopardized, and that they certainly would not expose it to the application of new restrictions by allowing the exportation of the diseased animals, as referred to by the learned French cattle inspector. It is quite probable that in his anxiety to fulfil his official duties, his patriotic zeal has upset his judgment and he has allowed himself to be carried beyond the limits of strict verity in his statements. Perhaps a quiet reconsideration of the case may cause him to amend his opinion; but yet, again, might it not be a proper thing for our worthy Chief of the Bureau of Animal Industry to do, to endeavor to neutralize any probable evil influence which may follow Professor Grandeau's remarks, by correcting their "inaccuracy," by calling the attention of the various European governments to the new regulations of the Department of Agriculture; to the establishment of our sanitary works, and to the recent creation of official veterinary inspectors for the determination of the condition in respect to health, of exported as well as imported cattle, and of their products?

KOCH'S CURE FOR TUBERCULOUS DISEASES.—Only a few weeks have elapsed since the announcement of the discovery of the great German doctor. Since then the daily press and the scientific journals, principally the medical, have been full of the subject; patients almost without number have already submitted themselves to treatment; the lymph has been distributed, received and tried throughout almost the entire world, and still the results which have been obtained continue to be of the most indefinite character. To-day, as almost on that of the first great announcement, the medical profession seems to be doubtful, or at least divided as to the definite and real value of the "discovery."

We have watched as carefully as we could all that has been published on the subject, and so far our researches have failed to discover anything relating to a part of the experimental process which in our opinion ought to have been followed before the treatment had been allowed to enter into the domain of human therapeutics. We are here referring to experiments upon our domestic animals, and especially upon those which, there is a tendency to believe, are among the most common means of the transmission of the disease. It is true that it was by experiments upon animals that the lymph was discovered, but if only rabbits and guinea-pigs were employed, it was, so to speak, only an experimental tuberculosis; and if apparently good results were obtained with them, would it not have been the dictate of wisdom to test the virtues of the lymph upon the cow, for example, as an animal in which tuberculosis is especially common, and upon which, by post-mortem inspection, after a supposed recovery, the effects of the treatment could have been learned with scarcely a possibility of doubt. We are not informed whether or not such experiments have been made, but we feel confident that they would have produced results quite as satisfactory and valuable as those which have accrued where human beings have been the subjects, and which we fear may be justifiably considered to have cost the lives of those whose death has already been recorded, or who, if not subjected to martyrdom as victims to an incompletely understood treatment, might at least have been saved from a sudden and fatal collapse. The adoption of a comparative therapeutics with Koch's cure would certainly have gained much in professional estimation by this course. The prophylactic application of anti-rabid inoculation of Pasteur did not enter human practice until the great French chemist had fully proved its effects on the animals most subject to rabies. Would it not have been wise for Dr. Koch to have followed the same method?

A NEW MAGAZINE.—The *Bacteriological World* is announced to make its appearance with the beginning of the coming year. Thus January, 1891, will introduce the first member to its friends. The circular which we have received



informs us that its "mission will be the general dissemination of knowledge on the subject of bacteriology in general, and pathological micology in particular."

In view of the interest which American scientists have of late manifested in this important department of medicine, and the important place which at the present time the subject occupies in the etiology, diagnosis and treatment of disease, there can be no doubt that the *Bacteriological World* will receive a cordial welcome at the hands of physicians as well as veterinarians, and especially when it is considered that the editorial work will be placed in the hands of our young friend Dr. P. Paquin, of the State University of Missouri.

The subscription price of the new magazine will be \$3.00 per annum and we are pleased to announce to our readers that by special arrangement, subscribers to the *Bacteriological World* who desire it, will receive also the AMERICAN VETERINARY REVIEW for a joint subscription price of \$5.00 per annum.

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## ORIGINAL ARTICLES.

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### CASTRATION OF THE HORSE.

By DR. TAIT BUTLER, V.S., Davenport, Iowa.

A paper read before the Illinois Veterinary Medical Association.

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I have two reasons for calling your attention to the subject of castration. The first is that, owing to the fact that it is a source of convenience and economic profit to man, it has become so generally practised that veterinarians, in justice to themselves and the public, can no longer continue to deem it an operation beneath their scientific skill and consequently neglect it. The second reason is that, although I have searched diligently, I have been unable to find anything in veterinary literature that at all represents the opinions of American veterinarians and castrators.

As to the literature on the subject in the English language, it is almost wholly unworthy of notice, except, perhaps, in a

few isolated cases, of which the work by Liautard is an example. But even "Animal Castration," by that eminent veterinarian, is in reality little more than a compilation of the opinions and practice of European operators; and although I have a high opinion of its author both as a gentleman and scientific veterinarian, yet justice compels me to admit that it is a work by no means abreast of the times and in many parts indicates a lack of practical experience on the part of its author.

In order to avoid occupying too much of your valuable time, I shall in this paper confine myself to a consideration of castration and its results in the horse.

#### *Castration of the Normal Male Horse.*

Opinions, even of experienced operators, differ in regard to the age of a horse which best fits him to withstand the operation and at the same time yield the best economic results to his owner. In my opinion the light harness horse should be castrated at two years old, in order to aid a development in harmony with his purposes of life. If castrated at an earlier age, lack of neck and shoulder development is the result, while if allowed to carry his testicles longer, a development of the neck disproportionate with that of the other parts takes place, thereby impairing his beauty and economic value.

Keeping in view the same object, namely, the production of an animal best fitted for his purposes in life, the draft horse may be castrated at one or two years old, but preferably at the former age. For, owing to the purposes for which he is used, his value is enhanced by a large body development, and especially is a full development of the hind quarters desirable.

However, in my opinion, the age of the animals is an unimportant factor in the production of the death-rate from this operation. If the operation be properly performed, with antiseptic precautions, the death-rate will be little, if any, larger among animals ten years old than among those of a much younger age. Of course, if an animal be so old that his physical vigor is declining, he will not be so well fitted to withstand any operation, but, other things being equal, the opera-

tion may be performed with almost equal safety at all ages during the full vigor of life. This, I am aware, is not in harmony with the opinions of veterinarians in general, but careful observation and considerable experience has led me to this conclusion.

There is also much diversity of opinion concerning the question as to what time of the year the operation should be performed, but a majority of operators favor the months of April and May. If the subject be in good health this is of minor importance. In fact, the weather is never too hot nor too cold to obtain good results if the animal be properly taken care of for a few days immediately following the operation. My experience would lead me to believe that if any time of the year is objectionable it is during the months of February, March and April, but that I think is due to the fact that at this particular season of the year the vitality of our animals is at its lowest ebb, owing to the inclement nature of our winters.

All the older writers on the subject also attach considerable importance to a so-called process of preparing the animal for the operation. If a horse be in good health he is fit for the operation, and no process of depletion by purging and starving is necessary. If he must be "thrown," it is then best, for obvious reasons, that he be deprived of food and water for a few hours preceding the operation, but if the better method of performing the operation, with the animal upon his feet, is pursued, not even that is necessary. Emasculation of the horse is so universally practised in this country that the method of operating which requires the least possible amount of work on the part of the operator and owner, if it be in strict accord with scientific surgery, is the highest desideratum. Keeping this end in view the first step is to confine the animal in such a manner that the operation may be properly performed with safety to all concerned. Some difference of opinion exists as to the best method of securing this end. Without entering into a discussion of the various methods of throwing and securing horses for this operation, we may state that a large number of operators perform the operation with

the animal standing, and thereby avoid the inconvenience of casting him. I prefer this method for the following reasons: First, because it is much less severe on the horse and materially decreases the danger of doing him permanent injury. That is, it obviates the danger of severe strains (which frequently produce a condition known to the public as "crampy") broken bones and hernia. If hernia does not exist at the time of the operation, it is not nearly so apt to occur, if the animal be allowed to stand, as when he is thrown and secured in such a position as to invite hernia, both by his exertions to free himself and by the peculiar position in which he is tied. Second, because it requires much less labor on the part of the operator and owner, and enables the former to effect the desired results in less time and to better advantage. Of course, if the surgeon be extremely clumsy and possessed of undue fear he should cast his subject, or better still, not operate; but otherwise, the parts upon which he is to operate being in their natural position, he is thereby better enabled to perform the operation according to the teachings of science and practical experience.

Where the value of the standing operation is most apparent is in aged horses. If thrown their great strength and age render it a severe operation for all concerned; while if operated upon in the standing position, they make little or no resistance and therefore the operation is a trivial affair.

The only class of animals that I would throw is light harness colts, one year old. These lie down more frequently than others during the operation and although by this they cannot do themselves nor the operator any harm, it is some annoyance. Occasionally one of any class or of any age may give a little trouble in this manner, but when considered in relation to the advantages of the standing operation on the whole, this drawback is insignificant indeed.

The objections to the standing operation come chiefly from those who have never given it a fair trial. It is argued that if the cord be short the testicle cannot be secured without much difficulty. This is a mistake, as all who have operated with the animal upon his feet know full well that the testicle

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can be grasped much more easily than when he is tied in such a manner as to render tense the skin in the external inguinal region. But if the gland can be only felt and not grasped, as is frequently the case in both methods of operating, it can be as readily secured by one method as the other, by making the incision through the skin and dartos and introducing the fingers into the opening of the external inguinal ring. Another objection frequently given against this method of operating is that if hernia occurs, the animal must be thrown. Bearing in mind the rarity of this complication, that as before stated it is not likely to occur, and that if it does, a "suspensory" may be applied and the animal thrown, this fancied objection appears somewhat absurd, especially when it is remembered that even where the animal is thrown hernia is seldom observed until he is allowed to rise.

Having decided upon the standing operation the first step is to secure the animal. To do this he must first be "haltered," if, as is frequently the case in the West, this part of his early education has been neglected. If a rope, arranged with a slip-loop at one end, be thrown over his head and the other end fastened to a post, or held by two assistants, a slight choking is usually sufficient to induce him to allow a halter to be placed on his head and a "ring-twitch" \* on his upper lip. When the twitch has been twisted sufficiently tight the "tie-strap" is to be passed through the ring and the head secured to the manger, or a post, or held by an assistant. If the right side of the animal can be placed against some firm object, it will be found advantageous, but it is not essential.

The animal now being secured, the scrotum and contiguous parts should be well washed with a sublimate solution—1 to 500 or 1000—and special care taken that the hands of the operator and all instruments to be used are rendered thoroughly aseptic by washing in a similar solution.

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\* A ring-twitch, as you are probably already aware, consists of an iron ring about five inches in diameter, in which is tied a rope of sufficient length to encircle the upper lip. Its advantages are that it can be conveniently carried in an ordinary operating case and that if, when adjusted, the tie-strap on the halter be passed through it, an unruly horse can be examined and even minor operations performed without an assistant.



On approaching the animal for the operation, the surgeon should place his left shoulder against the left side of his patient, and with his left hand grasp the testicle which is drawn the closer to the body, when with a scalpel, held in the right hand, he may expose it by cutting through the enveloping membranes with one firm, quick, and free movement from before backwards. The testicle having been exposed, the next step is its removal. This may be, and in fact is, done in many ways, *but to my mind only two are worthy of approval.*

One is to remove it with an ecraseur and the other to ligate the cord and remove it with a knife. I prefer the former method because, all things considered, it is of greater practical utility. That is, if the more surgical method of ligating the cord has the advantage from a scientific standpoint, that is more than counterbalanced by the greater convenience of the ecraseur. The question is, does the advantage, if any, possessed by the ligature, justify the extra amount of work required? In my opinion it does not, but we shall nevertheless briefly consider the *modus operandi* of both methods.

To remove the testicle with the ecraseur, pass the fingers of the left hand through the loop formed by the chain and grasping the testicle draw it gently down and apply the chain sufficiently high on the cord to *include in the part removed a small portion of the tunica vaginalis reflexa at the frenum.* This is to remove the small pocket formed by the loose portion of this membrane retracting and slightly folding upon itself owing to the adhesions at the posterior part of the cord. The chain being properly adjusted, the testicle may be removed by slow interrupted turns of the ecraseur screw. The testicle having been removed I enlarge the incision in the scrotum, making it from three to five inches in length according to the size of the testicle removed. I then by means of an insufflator, thoroughly disinfect the cavity with the "pulvis iodoformi dilutus" of the National Formulary. This completes the operation and for after-treatment I recommend only good care and plenty of gentle exercise after the first twenty-four hours.

Two methods of ligating the cord will be briefly described. One is adapted to the standing operation and has to a limited

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extant been practised by myself with good results, while the other is the method described by Frick in an article on "Castration under Antiseptic Precautions," in the *Journal of Veterinary Medicine and Comparative Pathology* (Deutschc) with certain suggested improvements by Dr. W. L. Williams, of Bloomington, Ill.

To ligate the cord with the animal standing, the testicle is grasped with the left hand and with a needle in the right a catgut ligature passed through the cord immediately posterior to the spermatic artery and close up to the cut edges of the tunica vaginalis reflexa. The ligature is then tied around the anterior portion of the cord sufficiently tight to compress the spermatic artery, but not necessarily tight enough to cause necrosis of that part of the cord inclosed. There being no danger of the ligature slipping, the cord may be cut through close up to it and the testicle thus removed. The same after-treatment is pursued as when the testicle has been removed with the ecraseur.

Another method of operating, which can only be pursued with the animal in a recumbent position, will be given as described by Frick, with those modifications which to my mind seem desirable.

The scrotum and surrounding parts are thoroughly washed and disinfected. The testicle is exposed, with as small an incision in the enveloping membranes as possible, and immediately douched with a sublimate solution—1 to 1000 or 2000. Frick then applies a silk ligature around a portion of the cord in a very bungling manner, but it is suggested that a carbolized catgut ligature be applied around the whole cord well above the epididymis and the testicle removed with a knife or pair of scissors. He then thoroughly washes the scrotal wound with the sublimate solution, which I would suggest might with advantage be supplimented by a thorough dusting with iodoform. The wound is then closed with silk sutures, as used by Frick, or preferably with catgut as suggested by Williams, in such a manner as to include the tunica vaginalis reflexa. As after-treatment he recommends as nearly perfect quietude as possible, and it appears to me that if the

desired end, healing by first intention, is to be obtained, this is essential. However, in veterinary practice wounds can seldom be got to heal by first intention, owing to the difficulty in keeping the injured parts sufficiently quiet. Therefore it seems to me that, although this method is strictly correct from a theoretical standpoint, it is not calculated to give good results in general practice. Yet, Frick says that he obtained primary union on both sides in seven out of twelve cases, and that out of the twenty-four wounds sixteen, or two-thirds, healed by first intention. Moreover, Bayer reports that in fifteen cases of antiseptic castration, ten out of the thirty wounds healed by first intention; but even that is undoubtedly a higher per centage of primary unions than could be obtained under the conditions of environment met with by the general practitioner in this country. Although, as before stated, I have had no experience with this method of operating, I believe it very likely to be followed by abscess of the scrotum and champignon.

#### *Castration of Cryptorchids.*

Ectopiæ of the testicles may be divided into two classes—inguinal or false cryptorchidism (flankers) and abdominal or true cryptorchidism (ridglings or originals). The former indicates that the testicle is lodged somewhere in the inguinal canal and the latter that it is in the abdominal cavity.

The castration of abdominal cryptorchids has long been a subject of grave importance to veterinarians, but we may search in vain the whole field of veterinary literature for a description of the operation that would be of the least value to the young surgeon. In fact, if he were to follow the directions of such eminent authors as Hertwig, Hering, Vogel, Stockfleth, Degive, Schmidt, Ostertag, Putz, Jacoulet, Fleming and Liautard, he would not operate at all, or worse still, operate with fatal results. The practical surgeon who follows the American or Miles method of operating, is not, after reading a description of Degive's method as given by Liautard in "Animal Castration," surprised that he lost thirty per cent. of those operated upon. The wonder is that he did not lose a

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large percentage. Fleming, in an article published in the *Veterinary Journal*, March, 1881, tells us of the great success of Degive, and asserts that his loss was less than ten per cent. However, H. Putz, of the University at Halle, in writing of the operation, tells us that Vogel, of Stuttgart, as late as 1885, relates the experience of Degive and Stockfleth and says they record a loss of thirty per cent.

As an illustration of the worthless nature of the literature on this subject in the English language, I shall quote a few passages from the above-mentioned article by Fleming. On page 163, Vol. 12, of the *Veterinary Journal*, he says: "The external opening is, of course, constituted by the inguinal ring, but the internal or abdominal must not correspond to the internal ring; as if it does, Degive assures us, hernia of the intestine is almost certain to follow. The superior or internal opening should therefore be made through the peritoneum, at one side and in the vicinity of the sub-lumbar region, in front of the external iliac artery, and on the surface and near the posterior extremity of the small psoas muscle." "At one side" of what? "In the vicinity of the sub-lumbar region"—very definite indeed! "In front of the external iliac artery"—could the opening be easily made behind it? "On the surface and near the posterior extremity of the small psoas muscles"—certainly beyond the comprehension of an anatomist of other than the Fleming school. After reading such a description, this portion of the operation must, of course, be perfectly clear to all! But, on the very next page (164) in describing the method of Degive, which he asserts is the best and productive of good results, Fleming says, "The fingers gathered into a cone shape, are introduced into the external inguinal ring and pushed slowly and steadily in a rotary manner in the direction of the canal or external angle of the hip, pressing lightly on the crural arch. In this way a passage is at first made through the internal inguinal ring, then through the space succeeding it, and finally reaches the peritoneum. \* \* \*" You will readily observe the inconsistency. On page 163 he says that "*the internal or abdominal (opening) must not correspond to the internal ring;*" while

on page 164 he says, "*a passage is at first made through the internal inguinal ring.* \* \* \*" I might continue in the same line but to no purpose, as the same cloud of inaccuracy and ambiguity surrounds this special field of veterinary literature from the earliest to the present time.

M. Jacoulet's article in the AMERICAN VETERINARY REVIEW, (Vol. 9), on "Castration of Cryptorchids," is probably the best description of the European method of operating in the English language, but it is only the Degive method explained in a more acceptable and intelligible manner. It possesses, however, the cardinal defect of all others, namely, of making out of a comparatively simple and easy operation, a very complicated, difficult and dangerous one, and if, by such a method, Degive and a few others have been successful in a fair percentage of their operations, the fact is undoubtedly due to their manual dexterity, rather than to any merit possessed by the absurd method pursued.

Having failed to find a description of the operation which to my mind is worthy of approval, either from the standpoint of scientific surgery or actual experience, or that represents the opinions of American operators, I shall as briefly as possible describe the method pursued by myself. I make no claim of originality for my method of operating, for, although I have never had an operator who possessed an accurate knowledge of surgery and anatomy describe to me his method of operating, still from personal observations I am convinced it is practically the method pursued by all successful American operators.

The operation should not be performed on animals less than two years old; for, although by exercising care, it may with safety be performed at a much younger age, still owing to the slightly increased danger, and the fact that the testicle may yet descend, I never operate before that age. However, if the testicle is still in the abdominal cavity when the colt is one year old, it will in all probability remain there, but if it has already descended into the canal it may, by the time he is two years old, have descended as far down as the external inguinal ring or even into the scrotum.



The only conditions essential to the fitness of an animal for the operation are, that he be in good health and deprived of food and water for twenty-four hours immediately preceding the operation. Medicinal treatment of an animal in good health, in order to better enable him to withstand the effects of an operation, is not in accord with the surgical science of our day. The point is to have the animal in good health and then to avoid the introduction of septic material into his system.

The operator need not concern himself about the questions, whether his subject be an abdominal or inguinal cryptorchid, or whether the ectopiæ of the testicle be on the right or left, or both sides, until he has him thrown and securely tied, numerous so-called authorities to the contrary notwithstanding. All the difference between the operations for inguinal and abdominal cryptorchidism, is that the latter extends beyond the former to the extent necessary to enter the abdominal cavity and secure the testicle. The method of procedure in the former is, as far as it goes, identical with that in the latter, and hence it is obvious that a knowledge of the exact condition present comes as soon as required.

If the side on which the cryptorchidy exists cannot be determined by the absence of a cicatrix, a careful manipulation of the parts will generally afford the desired information. The atrophied cord can almost always be felt where a testicle has been removed, but such is not always the case. At least, the evidence of an atrophied cord may not be sufficiently conclusive to justify an operator in forming an opinion, especially if it be in direct opposition to that of the owner or attendant, who has, perhaps, seen the normally situated testicle removed. However, owners and attendants are so liable to be mistaken in regard to this matter, that their opinions are of little value. Therefore, an operator should never hesitate to cut into a horse on the opposite side to the one designated by the owner or attendant, if on the side thus designated an atrophied cord can be felt with any degree of certainty. If by no other means a conclusion can be reached, an examination per rectum may shed some light upon the subject; but

if this be done by the operator, he must be especially careful to thoroughly wash and disinfect his hands before proceeding with the operation.

The first step is to cast and secure the animal in such a position as to facilitate the various movements necessary to complete the operation. Without describing the various methods of casting and securing animals for this operation, we may simply call your attention to the importance of tying them in such a manner as will flex well the stifle and hock, and bring the fetlock as close to the former as possible, thereby spreading the thighs and leaving the inguinal regions free from the pressure naturally exerted upon them. This may be done without the "spreader" which, if not harmful, is certainly useless.

After having secured the animal in the proper manner, washed the parts thoroughly in a sublimate solution, and determined the side on which the ectopiæ of the testicle exists, the operator may proceed to place his patient in that position necessary for the operation. The most convenient position is, perhaps, on the opposite side to the one on which the ectopiæ exists. Then, if an assistant by grasping the hock of the upper leg pulls the animal partially, but not completely on his back, and holds him there, the best possible position has been secured.

The first step in the operation proper is to make an incision in the skin and dartos. By many writers even this simple act is made to appear difficult, and to require not only a special instrument, but also great dexterity on the part of the operator in order to avoid wounding the large divisions of the external pudic veins. All this is rank nonsense, as no special care need be taken, and certainly no other instrument than an ordinary scalpel is required. The external pudic veins run immediately under the skin and close to the median line, while the proper place for the incision is at least two and a half or three inches from this line, where no danger nor difficulty can be encountered.

The exact place for the incision may be obtained by drawing a line from a point immediately over the internal inguinal

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ring to where the testicle would normally be situated, and then intersecting it by another, about five or six inches in length, drawn parallel to the median line, but about three inches from it. If this second line be drawn so that two-thirds of it is anterior to the first it will exactly represent the proper place for the incision.

If the foregoing directions be followed, no hemorrhage nor other difficulty need occur and all that becomes necessary is for the operator to place himself behind his subject, and with the first finger and thumb of his left hand render tense the skin, while with an ordinary scapel in his right hand he makes a free incision through the skin and dartos.

With the skin and dartos thus divided, the region of the external inguinal ring may be explored and the testicle felt if in that locality. To do this it is not necessary to extensively lacerate the loose cellular tissue in that region, as the testicle, if there, may be felt through it. If the testicle cannot be felt in the vicinity of the external inguinal ring, the skin and dartos are to be raised with one hand, and with the fingers of the other the connective tissue lacerated in the direction of the internal inguinal ring, or in other words, in the direction of the external angle of the ilium and over the tract of the inguinal canal. As the operator proceeds with this process he can, his fingers being beneath the skin and dartos, readily detect the testicle through the other tissues, no matter in what portion of the canal it may be located, and it is, therefore, absurd for him to force his hand into the external inguinal ring and inguinal canal, and thereby entail upon himself much work and great responsibility. If when the region of the internal inguinal ring is reached, the testicle cannot be felt anywhere in the canal, the case is one of abdominal cryptorchidism, and the abdomen must be entered to procure the testicle; but if, on the other hand, the testicle can be felt, the case is one of inguinal cryptorchidism, and the operation is thereby reduced to one of much less gravity.

To procure the testicle, when in the canal, the operator with his index finger penetrates the tissues directly over it until the surface of the vaginal sheath is felt. The opening

thus made may then be enlarged by the introduction of two fingers. To lacerate the tunica vaginalis reflexa it is generally necessary to introduce a scalpel and nick the membrane, when the opening may be enlarged with the fingers and the testicle secured without difficulty. The completion of the operation may be effected as in ordinary castration and, therefore, no further description is necessary. If after passing the fingers up under the dartos as far as the internal ring and carefully manipulating the tract of the canal, the testicle is not discovered, the operator must continue the process of breaking down the loose cellular tissue in the direction of the external angle of the ilium until a point about an inch and a half superior to the internal inguinal ring has been reached. When this has been done sufficiently to allow the hand to pass freely into the artificial channel thus formed the next step is to enter the abdominal cavity. This should be done at a point superior to but in the vicinity of the internal inguinal ring. If the opening be made even through the muscular and other tissue directly superior to the inguinal ring the operation may be completed with ease and safety; but the preferable point at which to enter the abdominal cavity is about an inch, or an inch and a half, above and behind the internal inguinal ring. Or, in other words, behind Poupart's ligament and between it and the ilium, but superior to the inguinal ring. If when the ligament is felt the index finger be passed over it and then turned downwards the cavity may be entered with ease. Moreover, if a point an inch superior to one on a level with the internal inguinal ring be selected the finger enters the abdominal cavity on the line of descent of the testicle and above the crural vessels, thereby combining the greatest possible convenience and safety.

After the index finger of the hand corresponding to the side on which the *ectopiæ* of the testicle exists has been forced into the abdominal cavity, the next finger may be pressed down alongside of it so as to slightly enlarge the opening. If the opening has been made where above directed, in no case will it be necessary to introduce the whole hand into the abdominal cavity unless the testicle has remained in its primary

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location above the peritoneum, which, if it occurs at all, is very rare indeed. At least, in ninety-nine out of every hundred cases, sufficient of the cavity can be explored, simply by the introduction of two fingers, to secure the testicle or some of its appendages. It may, however, be mentioned that the extent of cavity that can thus be explored is greatly increased by pressing downward, with the disengaged hand, the abdominal wall in the vicinity. Therefore, no exact rule can be laid down as to the exact time when it is permissible for the operator to introduce his whole hand into the abdominal cavity. If there be no probability of a mistake in regard to the side on which the cryptorchidy exists and he has sought in vain, for at least an hour, he may perhaps with propriety pass his hand into the abdominal cavity; but, while I have done this on more than one occasion, still I am confident that I never operated upon a case where a little more patience and perseverance, without such introduction of the hand, would not have secured the testicle with greater safety to the animal.

No description of the method of procedure in searching for the testicle would be of value to the inexperienced operator. If he has sufficient practical knowledge of the anatomy of the parts within his reach to recognize each organ as his fingers came in contact with it all that is usually necessary to complete the operation is patient perseverance. If, however, the precaution of depriving the animal of food and water for twenty-four hours immediately preceding has been neglected some difficulty may be experienced in finding the gland, and if the operator be not a practical anatomist he may also experience some difficulty in distinguishing certain parts of the cord and vas deferens even when within his grasp. He may, however, usually expect to find within easy reach either the testicle, epididymis or vas deferens, but if the first two cannot be felt the last may usually be secured, as it passes along the side of the bladder, by compressing the abdominal wall, as above directed, so as to bring that organ within easy reach of the fingers. Owing to the location of the opening into the abdominal cavity the epididymis or vas deferens is usually secured before the testicle, but this serves the operator's pur-



pose well, as in that way he can withdraw his fingers with the epididymis or vas deferens, as the case may be, and then by gentle traction the soft testicle may usually be removed without enlarging the opening. When the testicle has been exposed the ecraseur is the best instrument for its removal. There is another condition occasionally met with which may give some trouble to those who operate according to the above method. It is where the testicle is still in the abdominal cavity but a portion of the cord has passed through the internal inguinal ring into the canal.

If when breaking down the loose tissue in the direction of the internal inguinal ring the cord, or, as is usually the case, a portion of the epididymis, be felt in the canal it is easily distinguished even from a very small testicle and then the operator may choose between two methods of procedure. One is to go directly down upon the loop of the cord and run the risk of being compelled to dilate the internal ring, by the use of the probe-pointed bistoury, in order to remove the testicle through it; while the other is to enter the abdominal cavity close to the ring and by grasping the testicle pull the loop of the cord out of the canal. If there be no adhesions, and they are rare, I prefer the latter method as requiring less work and possessing greater safety.

The wound should be kept thoroughly aseptic by frequent irrigation with a sublimate solution—1 to 1000—during the operation, and in no case should oil be used to lubricate the hand, because it is neither conducive to cleanliness nor necessary. The natural moisture of the tissues and the sublimate solution are all the lubricants needed and possess the advantage of leaving the wound clean and free from all septic material. If proper antiseptic precautions have been observed that portion of the wound near the opening through the abdominal wall will heal very readily and without suppuration. The wound in the skin and dartos should be left open and thoroughly dusted with iodoform. A daily repetition of this, with plenty of gentle exercise after the first twenty-four hours, and good care, constitutes all necessary after-treatment. It is good practice, however, upon allowing the animal to rise to

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inject hypodermically about three grains of sulphate of morphia to insure greater quietude and increased comfort on the part of the patient.

By this method hernia, that frequent sequel of the operation when performed by the Degive method, is entirely avoided if but two fingers be introduced into the abdominal cavity, but even though the whole hand be introduced into the cavity, the location of the opening, together with the action of the skin, especially after slight swelling has taken place, renders this complication quite improbable. Moreover, the careful surgeon who operates under thorough antiseptic precautions will by this method reduce his death-rate even in abdominal cryptorchids, to less than five per cent. I have operated repeatedly by both methods and the difference has usually been that between complete success and complete failure.

*Castration with Inguinal or Scrotal Hernia.*

By many veterinarians castration with the above complications is thought impossible without the use of the clamps. This is a mistake, for not only can the clamps be dispensed with, but their use is also neither in accord with scientific surgery nor practical experience.

There is only one proper method of operating for inguinal or scrotal hernia and by it the animal may be castrated, or not, to suit the convenience of the owner.

Castration with clamping of the vaginal sheath at the external inguinal ring, as generally practiced, while usually successful is neither surgical, scientific, nor secure. But if this method must be pursued a cat-gut ligature properly applied is far superior to the clamps, no matter from what point of view it be considered.

To apply the ligature proceed as in the ordinary covered operation by reducing the hernia, the various methods for which it is not necessary to here consider, and dissecting the vaginal sheath, with the testicle inclosed, from its outward adhesions until the external ring is reached. Then draw the sheath closely around the anterior border of the cord and with a needle pass a double carbolized catgut ligature through

the sheath immediately anterior to the spermatic cord. The ligature around the anterior portion should be drawn moderately tight but the one which incloses the cord should not be tied tight enough to cause necrosis of the part enclosed. This done the testicle may be removed with the ecraseur within half an inch of the ligature. If a suspensory be applied, which is not necessary, it need not be left on for more than twenty-four hours. By this method protrusion of the intestine is as effectually prevented and moreover, there is no clamp or other foreign substance to impede the immediate healing of the wound. The operation for inguinal and scrotal hernia which at the same time combines the two important factors of success, security and simplicity, and also obviates the necessity of emasculation, is certainly the highest desideratum. The operation which does this must close the vaginal sheath at the internal inguinal ring, as by that alone can the descent of the bowel be effectually prevented with any degree of certainty. Stanley's operation, as given in Williams' "Principles and Practice of Veterinary Surgery," is, as far as it goes, the method which I propose to describe, but he does not complete the operation so as to effectually prevent a recurrence of the lesion, which is perhaps the chief advantage possessed by this method of operating. Whether the operation be for scrotal or inguinal hernia, strangulated or otherwise, it is exactly the same.

The animal should be thrown and secured as for ridgling castration, and placed upon his back with his hind quarters well elevated. If the hernia is not strangulated it may be readily reduced before any incision is made, and even in some cases of strangulated hernia the same may be true; but if the hernia cannot be easily reduced the surgeon should cut directly down upon the inguinal canal at (or an inch below) the internal inguinal ring. The incision may be made longitudinally, or over the course of the inguinal canal, but the latter is preferable if care be taken not to extend the incision sufficiently near to the median line to wound the posterior abdominal or epigastric vein. It should, however, be sufficiently large to enable the surgeon to work without inconvenience, but need only extend

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deep enough to divide the skin and the abdominal tunic, as the other tissues beneath may be divided with the fingers. No incision need usually be made in the vaginal sheath, but when it is reached the index finger should be passed down alongside of it into the internal inguinal ring. If a probe-pointed bistoury be now passed down along with the finger, the ring may be incised sufficient to render easy the reduction of the hernia by taxis. The nick in the ring should extend outward and forward so as to avoid wounding the posterior abdominal artery.

When the hernia has been reduced, the vaginal sheath should be grasped with the fingers, or a pair of forceps, and a catgut ligature passed through it close to the spermatic cord by means of a curved needle. If this ligature be then tied sufficiently tight to cause adhesion of the inner surfaces of the sheath, a recurrence of the lesion will be effectually prevented for all time. If the hernia has been reduced before any incision was made, it will only be necessary to secure the vaginal sheath and ligate it as above indicated. The wound may be closed by sutures, and under antiseptic precautions will heal readily.

This operation, besides being neither difficult nor likely to be followed by serious results, is the only one that gives positive assurance of permanent success. Moreover, by it the testicles may be saved, which, in highly-bred animals, is often an important consideration.

Stauley claims that no ligating of the vaginal sheath is necessary, but actual experience has proved that without it a return of the hernia may occur within ten minutes after the completion of his operation.

I have not the time to even briefly consider all the results of castration, but I cannot refrain from calling your attention to the etiology of scirrhus cord and fistula and abscess of the scrotum.

Writers on this subject have been wont to accept the old, erroneous theories in regard to the causes of these conditions, and, consequently, it was left for a progressive young practitioner to first call the attention of the profession to the true cause of champignon and abscess of the scrotum as sequels of castration. But when the cause of these results, so much to be

dreaded by the operator, was clearly pointed out, and actually demonstrated by numerous careful experiments, in an article submitted in competition for the United States Veterinary Medical Association and AMERICAN VETERINARY REVIEW prizes, by Dr. John Wende (Trianon), of Buffalo, N. Y., it was rejected by those so-called representatives of the profession as unworthy of consideration. This does not seem so strange if we consider that in other branches of science important discoveries have at first been too often treated with contempt by the generally accepted intellectual leaders. But in this case, although the majority of practical surgeons have been quick to recognise the importance of Dr. Wende's discovery, these two snails in progress have never seen fit to make amends for the injustice done this progressive young surgeon and the profession at large, and to place themselves in the van of scientific progress, by recognizing, in a public manner, the true worth of this discovery.

In conclusion, I will say that numerous carefully conducted experiments have convinced me that if a large incision be made in the skin and dartos, proper antiseptic precautions observed, and the cord severed by the ecraseur as directed by Dr. Wende, or as described in another part of this paper, scirrhus cord, and fistula and abscess of the scrotum, if not entirely prevented, will be rendered extremely rare. However, for the true cause of these undesirable results of castration, and an effectual method of preventing them, I would refer you to the above-mentioned article in Vol. ix, page 250, of the AMERICAN VETERINARY REVIEW.

### A NEW PARASITIC DISEASE OF CATTLE.\*

From C. O. JENSEN, Copenhagen, *Monthly Journal of Veterinary Medicine*, Vol. ii., No. 1.

Translated by RICHARD MIDDLETON, A.B., D.V.S., Stuttgart, Germany.

In the course of the last year it has become known that a whole series of veterinary diseases have been induced by small bacteria of ovoid form and strikingly similar appearance.

\* The title of this article is our own, Dr. Middleton having omitted to give us the translation of the title of the original.—EDIT.).

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Chicken cholera and rabbit septicæmia have long been known to owe their origin to such an organism. Kitt has explained the ætiology of cattle-plague; Oreste and Armanni have made public interesting investigations upon an extended buffalo disease in Italy; Löffler and Schütz have described a swine septicæmia and pneumonia, under the title "swine epidemic"; and lastly, Poels has written upon a septic-pleuropneumonia of calves. All of these diseases were ascribed to stationary bacteria which were exceedingly similar in their morphological, biological, and to some degree their pathogenic characteristics; it is therefore maintained by Hüppe and others that they are only physiological varieties of a single species, which is geographically widely spread.

I am prepared to add still one disease of calves, which is in many particulars interesting. At the end of January, 1888, there suddenly appeared upon a farm in Jütland, containing some 200 head of cattle, a malignant affection which attacked only the young animals; within a few days sixteen calves about two months old died, in from twelve to twenty-four hours after becoming sick. They showed high fever ( $105.8^{\circ}$ ) and diarrhœa; upon post-mortem the blood was coagulated and of a dark red color; a recent and extensive fibrinous pleuritis associated with pericarditis and ecchymotic spots under the pericardium; a well marked gastro-enteritis. Some did not show such extensive alterations as others. With one individual the course seemed chronic; on the under surface of the neck there developed a medium hard, painful, œdematous and more or less warm swelling. Veterinarian Christman was unable to place a diagnosis upon these patients, which he was treating, and therefore sent me a blood coagulum with a portion of the spleen to examine; he inquired if he had not to do with anthrax. No anthrax bacilli were present; on the contrary there were a few of the ordinary round-ended cadaver bacilli, together with a quantity of very small bacteria which took a watery gentian-violet stain more intensely at their poles than in the middle.

Two mice were inoculated with small pieces of spleen, and both died within thirty to thirty-six hours; upon section the

blood appeared dark and coagulated, spleen hyperæmic and swollen; in the blood contained in the heart an immense number of long oval bacteria were detected; these were, however, larger than those found in the spleens of the deceased calves, but responded to the stain in the same manner. Two rabbits which were inoculated with the blood and spleens of these mice died twelve to eighteen hours after; in the heart blood, and equally distributed in the vessels of the various organs, innumerable bacteria were found. Both showed severe hemorrhagic tracheitis; a pale and swollen spleen; the other abdominal organs, beyond being injected, were normal; the blood densely coagulated. From the blood and organs of the rabbits and mice, gelatine and agar-gelatine cultures were made.

The calves were removed to another portion of the farm and their food changed; the result was, that the affliction entirely disappeared; there were in all twenty-two deaths.

Not many days later the same colleague sent me the spleens of two calves that had died on another farm on which, in the course of a few days, five had succumbed; only two post-mortems were held, but these showed large areas of injected pleura, pericardium and peritoneum; echymoses upon the surface of, and parenchymatous degeneration of the heart.

In both spleens the ovoid bacteria could be observed in large quantities; from this we concluded that in all probability we had to do with the same affection as upon the first farm. Later I received microscopical preparations from the spleen of a one-year-old calf that was found dead in the stall and which had previously shown no signs of disease. By dissection of the same my colleague had found portions which were apparently anthracoid; the blood was dark and not firmly coagulated; spleen very large, dark and soft; extensive ecchymoses upon the peri and endocardium, with numerous hemorrhages superficially situated upon the abdominal organs. In this case the small ovoid bacteria were also found and obtained pure by inoculating mice, and through gelatine cultures.

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farm, were also changed with the same effect as upon the first farm; in all ten calves and one heifer died.

In January, 1889, the same disease appeared on a third farm in the vicinity of Jütland, causing the death of fifteen calves, the majority of which succumbed after but one day's illness. They were suddenly attacked, could not stand, and took no food or water; dyspnœa appeared and the afflicted died in a few hours. Post-mortem revealed an œdematous infiltration of the pharyngeal and laryngeal cavities; enlarged spleen and altered blood, and in some a phlegmonous inflammation in the posterior portion of the buccal cavity. In one calf was found an abscess upon the inside of the left cheek with phlegmonous infiltration of the adjacent tissue. Veterinarian Meyer, who had given me the foregoing history of his cases, also sent me a few portions from the organs. I found the ovoid bacteria in all of these specimens; further, two rabbits which had been inoculated therefrom, died in ten or twelve hours under the usual symptoms. One of the sick calves upon this farm was removed to another and so the disease was transported to the fourth farm, on which ten calves died.

White and ordinary mice died in twenty-four to forty-eight hours after inoculation; after death examination showed swollen spleen with dark blood and many large, but nevertheless characteristic ovoid bacteria. Rabbits died after twelve to twenty-four hours as a rule, but often after ten or twelve hours under symptoms of acute septicæmia; post-mortem examinations always showed a hemorrhagic inflammation of the trachea, with usually an enlarged spleen and a hyperæmic condition of the kidneys, liver and intestines; in the blood and spleen the same ovoid organisms occurred in surprising quantities; these were so numerous in some cases, as to occlude the larger capillaries of the mesentery.

On the 25th of January, 1888, a dog was injected upon the lateral portion of the neck, with one-half ccm. of bouillon culture of the calf plague (the fifth consecutive culture from the spleen of a calf); during the subsequent few days the animal became feverish, and at the point of injection there appeared

a phlegmonous infiltration the size of a hen's egg; this patient recovered in a short time. With the same result were those dogs inoculated with *chicken cholera* cultivations.

At the same time and with the same material, a foal was injected; after some time there developed a large painful and warm swelling of the skin and subcutis of the whole lateral surface of the neck; in a few days this disappeared and the filly remained sound.

Two pigs, respectively three and four months old, on the contrary, were less able to withstand the effect; one of these was inoculated on the 17th of March upon the flat of the thigh, with a drop of blood from the heart of an infected rabbit (the latter inoculated from calf's spleen); the next day I observed a diffuse, bluish-red, œdematous swelling at the injection point and this was accompanied by fever and lassitude. On the second day the swelling extended anteriorly along the abdomen and inside of the limbs; this was characterized by a dark, cyanotic, erysipelatous appearance. The subject lay quiet and slept, but ate nothing. After some days the general condition was improved, the œdema had disappeared and in its stead two hard swellings five inches in diameter appeared; on the twelfth day fluctuation could be felt. Following the incision a quantity of whitish pus escaped, containing necrotic debris of connective tissue and muscle. The ovoid bacteria were found in the contents, but not in so large quantities; a mouse was inoculated with portions thereof, and died in three days; at the examination the characteristic pathological alterations were present. The other pig became affected in precisely the same manner, and showed the same cadaveric changes. A third pig was fed with the intestines of an infected rabbit, but with negative results.

On the 6th of July a rabbit was injected with an agar culture (17th generation from spleen of calf) and the next morning was dead; a few drops of the heart-blood of the same was mixed with 6 ccm. of sterilized water, and injected into the neck of a bull calf four to five weeks old. Immediately after the temperature stood 101.3° F.; on the 8th at nine o'clock, about fourteen hours after, the temperature was 103.8°, pulse 82 and

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scarcely perceptible. The patient assumed the decubital position and was very stupid; it could not of itself stand upon the feet. Upon the right side of the neck I perceived a warm, doughy, painful enlargement about 3.5 centimeters long and four broad; upon this spot the cutis was hyperæmic. Case took neither food nor water; in the afternoon at four o'clock, with temperature 103.1°, the calf lay as if dead, and the following morning was found dead in the stall.

At the time of post-mortem rigor mortis had already occurred; the subcutaneous tissue upon the right side of the neck was infiltrated by a phlegmonous œdema which extended inferiorly and to some small extent upon the left side of the cervical region; the muscles were involved in a gray degeneration and their connective tissue was the seal of a hemorrhagic œdema. In the tracheal region an œdematous infiltration in the form of an individual swelling 0.7-1.0 cm. thick; lymphatic glands anterior to the shoulder were swollen and hemorrhagic, hydrothorax not present, pleura costalis dark injected and on sub pleural throughout the chest were hemorrhagic spots from the size of a pea to a bean. The surface of the lungs were covered at every part with a fibrinous exudate which at some points appeared in the form of layers. Beyond the injected condition of the trachea and bronchial the respiratory organs were normal; the bronchial and mediastinal glands at the entrance of the chest were swollen and dark red upon section.

Thymus gland hyperæmic, with here and there punctiform ecchymose; mediastium also ecchymotic. But little exudate in the pericardial cavity; heart muscles anæmic and fatty metamorphosed; numerous small hemorrhages under the endocardium of the right auricle and in the left ventricle many suggillations. In the abdominal cavity a small quantity of fluid, omentum fatty and injected, peritoneum clear, transparent, smooth and also injected, intestines and mesentery of a dark red color. Liver somewhat enlarged, and upon section of yellowish hue. Spleen swollen, soft and hyperæmic, section nearly black; kidneys also hyperæmic. Fourth stomach injected, but others normal. The mucous membrane of the



whole intestinal track was inflamed and maculated with hemorrhages of various sizes. Mesentery glands swollen and infiltrated with blood; the remaining lymph glands of the abdomen were in the same condition.

In the blood and liver somewhat fewer bacteria were found and were smaller than those found in the rabbits. They were particularly numerous in the œdema fluid, spleen and kidneys. Two rabbits and four mice were inoculated with the blood and portions of the organs, with a fatal result after a few days.

About 60 ccm. of the heart-blood, with 200 ccm. of milk, were given to another calf; temperature  $101.7^{\circ}$ , the next day temperature  $103.1^{\circ}$  but the general health was not disturbed; the calf received no sort of solid food and was not affected by the drench. On the fourth day this same patient received an injection of agar culture upon the side of the neck, temperature  $102.2^{\circ}$ ; the following morning was dull and would take no nourishment; temperature  $105.9^{\circ}$ . Eight o'clock the same evening a swelling of the size of one's palm was noticed; temperature  $103.5^{\circ}$ ; general condition better and a quantity of milk injected. The whole region was swollen and doughy in consistency, painful and warm; great depression; in another day swelling subsided to some extent and health further improved. After thirteen days there was a medium sized abscess upon the point of injection, which upon being evacuated and the contents examined, showed the ovoid bacteria in the pus, and the latter when injected into a rabbit, causing death in twenty-two hours. A guinea-pig was also inoculated subcutaneously and died after eight days, of a malignant phlegmon.

Thus we see that the same organism which killed calves in one to two days, killed rabbits in twelve to sixteen hours through a septicæmia, and the guinea-pig through a progressive phlegmon associated with degeneration of the connective tissue; pigeons which had been injected in the pectoral muscles developed only small necrotic spots; of seven chickens inoculated only one died, and that after eleven days illness; the dissection showed necroses of skin and muscles upon one wing (point of injection) and small necrotic portions that

reached from the surface to the deeper interstitial substance of the liver. From the liver and blood agar-agar cultures were made which when later injected into rabbits and mice gave positive results. In all the other chickens the sole influence of the injection was local, and consisted in circumscribed measures which were so extensive that one to two months were required to heal.

Bringing the results together we perceive that only in calves (horned cattle?) mice and rabbits, the disease or rather the bacteria cause an acute and contemporaneously fatal septicæmia; in other animals they cause, as a rule, only local processes. The various animals experimented upon, when ranged in order respecting their reception of the virus, are as follows: rabbit, mouse, calf, swine, guinea-pig, chicken, pigeon, horse and dog.

Through this order of transmission we obtain a means of differentiating the disease from others earlier known, and somewhat similar. Chicken cholera is most severe in its effects upon poultry; the swine plague (German) separates itself from this affection by its affinity for swine; cattle plague selects for its victims our large herbivorous animals. Our disease in some degree covers Poel's pleuro-pneumonia, and yet does not exactly; some of our cases develop more rapidly and are not found with pulmonary lesions; as regards the manner in which the two diseases affect swine we find that the Holland disease induces symptoms simulating swine plague, while our disease had no such effect.

As already remarked, we are inclined to consider all these diseases as so many varieties of manifestation of one cause; of one organism. In order to determine this question I made the following experiment. The six hens which had withstood the influence of calf virus, were vaccinated at the expiration of four to six weeks, with virulent chicken cholera culture. It was my purpose to see in how far the chickens were proof against chicken cholera. Provided the two diseases were only different as regarded virulence, *i. e.*, provided they were due to one and the same cause, we should naturally and logically expect the six chickens proof against chicken chol-

era. Such was actually the case, for they withstood repeated inoculating; with chickens which had not received injections of the calf virus, the result was directly opposite.

Hüppe and Kitt arrived at the same conclusion in experimenting with rabbit septicæmia; chickens and geese were inoculated with attenuated cultures of chicken cholera, and thereby received immunity from rabbit septicæmia, which is otherwise equally as fatal to fowl as to rabbits. These interesting experiments speak for the fact that the oval bacteria of the several diseases herein mentioned are identical, but they do not prove it.

In the abstract, it is possible that two different diseases may give immunity one from the other, especially when the bacteria which produce them are very similar; Roux and Chamberland have proven this by inducing immunity in guinea-pigs from malignant œdema by injecting virus of the carbuncle disease (French charbon symptomatique). Concerning the occurrence of these oval bacteria in nature, there is little known; the microbe of rabbit septicæmia is isolated from all putrid substances and impure water. Gamaleia always found in the intestinal contents of pigeons a bacteria similar to that of chicken cholera; these were only slightly irritating to poultry, but more so to rabbits; when these were passed through several rabbits they increased in virulence so that a point was reached at which chicken cholera was induced therewith in poultry and pigeons. Salmon found a bacteria in the nasal mucous of a sound swine, that could cause the death of a rabbit in one day; I have also found similar and more or less pathogenic bacteria (1) in the stomachic mucous of diphtheritic calves, (2) in the intestinal contents of a sound mouse, (3) upon a necrotic and thickened portion of a horse's lung, (4) in the pus that escaped from the abscess in a case of periostitic suppuration of the middle region of the foot.

All these oval bacteria agree so exactly—when we overlook the symptoms induced—that it is impossible to determine one from the other. They are characterized by the following peculiarities: They are immobile; they grow slowly

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in agar-agar and gelatine; the cultures are not particularly exuberant; they cannot grow upon potatoes at the usual room temperature. Through these properties, and many others, they may be sharply differentiated from other oval bacteria, especially from hog cholera (schweinepest or schweinsdiphtheritis) which are mobile, quick and lively upon gelatine and agar-agar, and grow a slimy exuberant mass upon the same; they flourish upon potatoes, where they form a yellowish brown tract.

Ribbert's bacteria of intestinal diphtheritis in rabbits is more similar to the swine plague bacteria; it is also mobile and grows upon gelatine and agar-agar as well as potatoes in a similar manner to the swine pest organism.

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### REPORTS OF CASES.

*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*—VETERINARY RECORD.

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#### THORACIC OBSTRUCTION OF THE ŒSOPHAGUS.

By M. W. DRAKE, D.V.S., Philadelphia, Pa.

On July 29th., at eight A.M., I was called to see a bay gelding about nine years old; he had been suffering about an hour; was taken very suddenly fifteen minutes after eating his morning feed of oats, showing the following symptoms: Standing with all four feet extended, head down and on a level with the neck, a violent expulsive cough with attempts at vomition, followed by severe muscular contractions of the interior cervical muscles, large quantities of ropy saliva escaping from the mouth and nostrils with each expulsive cough, the attempts at retching following each other at an interval of about ten minutes.

In about three hours these violent symptoms gradually subsided and retching occurred only on introduction of an irritant, such as water or oil, of which he would swallow two or three swallows, which would cause a reflex action of the muscular fibers of the Œsophagus, so forcing it up through the Œsophagus out of the nostrils and mouth.

*Treatment* : Oleum lini, ℥ ii; tr. opii, 3 i, every two hours, tr. opii, succeeded by tr. belladonna.

July 30th.—No change in his condition.

July 31st.—Would try to swallow water which returned through nostrils and mouth.

August 1st.—No change except weaker.

August 2nd.—Died at 4 A.M.

*Post-mortem*.—On exposing the œsophagus about nine inches anterior to the stomach there was found a large distention, the surrounding parts very much swollen and softened from the intense inflammation. An opening being made in the œsophagus the obstruction was found to consist of dry, thoroughly masticated salt hay, as large as a man's two fists; so dry, that it would crumble when broken. The œsophagus behind the obstruction was very much constricted. The stomach and intestinal tract were entirely empty.

## EXTRACTS FROM FOREIGN JOURNALS.

### COMMUNUTED FRACTURE OF THE LEFT BRANCH OF THE LOWER MAXILLARY—PURULENT INFECTION—DEATH.

By MR. DEBRADÉ.

This interesting report relates to a mare about eleven years old, which had developed a small fistulous tract on the left cheek, a little below the temporo-maxillary joint, the consequence of a kick received from another horse. Her condition was peculiar; she was much emaciated; the muscles of the left cheek considerably atrophied; mastication impossible; prehension of the food very difficult; the saliva escaping from the mouth bloody. The fistula discharged a whitish-yellow pus, apparently mixed with synovia, and the probe indicated a fracture of the upper extremity of the left branch of the maxillary, immediately below the condyle and the coronoid process, possibly complicated with arthritis. The author operated for this injury, after casting, by making a large T shaped incision to remove as many as possible of the loose fragments of bone which were present. With the ap-



plication of an antiseptic dressing, the mare seemed to improve, and her wound to assume an aspect which promised rapid cicatrization. Two weeks from the day of the operation, however, the animal did not seem so well. Her temperature had risen, her pulse counting 74 beats to the minute, and so small and thready as to be almost imperceptible. She had frequent chills; her skin was cold, and her breath had a slight foetid odor. Auscultation showed the respiratory murmur louder, though in places it seemed diminished, and even absent; percussion revealed little more than perhaps some dullness, more marked towards the lower border of the left lung; the wound of the face looked badly, the discharge having entirely subsided. Later in the day an abundant epistaxis occurred, with purulent, bloody discharge escaping from the nose, and the patient died after twenty-four hours of great agony.

All the lesions of purulent injection were observed at the post-mortem, the pleura, the lungs, the entire respiratory tract, the heart and the parenchymatous organs of the abdominal cavity, all participating, and confirming the diagnosis made by the author, a diagnosis which he had also established by the inoculation of guinea-pigs.—*Recueil de Med. Vet.*

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#### ANOTHER CASE OF UNILATERAL PLEURISY—RECOVERY BY THE GRADED COUNTER-IRRITATION.

By MR. MINETTE.

After describing the symptoms which were presented to him by a twelve-or-thirteen-year-old mare, from which he was led to form a diagnosis of unilateral pleurisy of the right side, the author concluded to resort to the application of a severe liniment, at first under the chest, and then renewed every day by the gradual increase of the surface over which it was applied, the application to be persevered in until the respiration at the flank became evidently improved in its character. With this treatment, diuretics and food of easy digestion were prescribed. The animal had so far recovered within a week that she was allowed slow work, and two

weeks after was sold to do a much harder farming work. The repeated and protracted action of the liniment left no blemish, and after a few weeks there remained no mark of the severe treatment to which she had been subjected.—*Ibid.*

#### RABIES IN A SOW—SPONTANEOUS RECOVERY—EXPERIMENTAL CONFIRMATION.

By M. F. PEUCH.

This animal was attacked by the peculiar symptoms which characterized her case, while on her way to market to be sold. Rushing suddenly and violently through the field, she threw down a man who had attempted to stop her, also biting him in the hand, and then stopping, endeavoring to conceal herself in a dark spot, threatening to bite whoever approached her. She was finally secured with a lasso and carried home. There she laid quietly down, and became apparently entirely indifferent to everything transpiring around her. When urged to move, it was with a staggering gait, the hind quarters being evidently weak; respiration was difficult; appetite failed; she had no fear of water, and was not excited by the presence of a dog. The next day her weakness became more marked, and she would sometimes assume the dog-sitting posture, at times opening her mouth as if desiring to bite, and grunting more or less when disturbed or punished; was more excited by the noise of clapping the hands together or of stamping the feet on the floor, then showing conclusive movements of the jaws. After twenty-four hours she attempted to get on her feet, but failed. Her appetite then began to return and she took some sloppy food, but seemed to be unable to swallow. From this point the symptoms improved, and about a week later she was pronounced cured.

The author asks, was she suffering with rabies? Believing this to be so, from the history of the symptoms, and considering the clinical value of the case, Mr. Peuch inoculated her, together with six other animals, two dogs, two rabbits and two guinea pigs, with an emulsion of pure rabid bulb. The sow resisted, with three of the other animals, and the three others died of rabies. Another experiment was made

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in which the sow, the three animals which had resisted the first inoculation, and four other subjects received another injection of rabid solution, in the anterior chamber of the eye. Of these, all died with rabies except one dog and the sow which had resisted the inoculation.

Conclusion: *First*, this sow was certainly rabid. *Second*, this disease, in swine at least, is susceptible to spontaneous recovery.—*Revue Veterin.*

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#### ACCIDENTAL INOCULATION OF ACTINOMYCOSIS IN A HORSE.

By PROFESSOR E. PERRONCITO.

In July, 1881, a horse received a wound on the anterior part of the stifle joint of the left leg, with section of the muscular fibres, solution of the skin, and bruise of all the surrounding parts. During the treatment which his injuries required, the horse was kept in a stable occupied by cattle. After forty days the wound was closed, leaving but a hard, subcutaneous swelling, and slightly deforming the leg. The tumor was treated by the application of a few points of the actual cautery, but remained in the same condition for some time. But subsequently it began to grow, and notwithstanding several attempts to check its development, continued to increase. At length, supposing that the trouble might be due to a deep-seated suppuration, the animal was thrown in order to be operated on for the escape of the suspected gathering. The appearance of the tumor, however, was such, that believing it to be of a sarcomatous nature, its entire dissection was performed. The microscopic examination made by the author showed a large number of actinomycosis tufts. The patient was ultimately destroyed.—*Ibid.*

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#### TIBIO-TARSAL DISLOCATION.

By MR. GAVARD.

The interest attaching to this report arises largely from the rarity of cases of the nature referred to. The case was caused by a collision between two horse railroad cars, in which one horse was thrown, remaining on the ground unable

to rise without help, being placed on his feet with much difficulty. Suffering great pain, he was conveyed to his stable, where he remained until seen by the author the following day. He was then standing well on his four legs with nothing at first sight to indicate that there was anything amiss with him. When called upon to move, however, locomotion was found to be almost impossible, and when attempted, occasioned the greatest pain. The right hind leg remained at rest, stiff and inflexible, and when displaced was carried as if formed of a single bone, the foot dragging on the floor. Pressure on the hock, especially forward, also occasioned great pain. Though there was, apparently, no visible deformity, yet on the inside a sharp and hard projection was observed, which greatly resembled the lower end of the tibia. Flexion at the hock was impossible, and when attempted, caused a faint, dry friction sound, but no crepitation. The animal being considered incurable, was destroyed. At the post-mortem the external lateral ligaments were found irregularly lacerated at their tibial attachments; the anterior capsular ligament was torn, and the tibia had been thrown inward, leaving the external groove of its lower end, and resting on the inner border of the trochlea of the astragalus; and no more after death than during life could the tibio-tarsal joint be flexed. There was no indication of fracture.—*Journ. de Zootechnie.*

#### PILOCARPINE IN TETANUS.

By PROF. FRIEDBERGER.

After the good results reported by Dr. L. Casati, the learned professor of the Munich School, desirous to test the therapeutic value of pilocarpine, employed it in seven cases. Six of these died without having exhibited the slightest amelioration which could be traced to the use of pilocarpine, which, on the contrary, had seemed to hasten the end. Recovery occurred in only one case, which was of a chronic nature, but a close watch of the manifestations of the patient failed to show anything which could be attributed to the use of the drug. Professor Friedberger consequently considers

that pilocarpine is not only useless in the treatment of lock-jaw, but is, in fact, injurious and dangerous. The sur-excitation which accompanies the ptyalism, the efforts for defecation, and the pulmonary complications following, suggest the objections to its use. And again its contra-indication is rendered evident, as hastening the termination, by the fact that immediately after its administration the patient begins to salivate, to perspire and to defecate, while its respiration becomes accelerated and anxious, and one or two hours later he falls down to rise no more.—*Monat. f. Prakt. Thierh.*

#### ENORMOUS VARICE OF THE SPUR VEIN.

By ED. DEBLOK.

For two years past a horse had carried on the back of the left spur vein a varicose tumor, about the girth. It was then of the size of a nut, fluctuating and disappearing with a slight pressure of the hand. Of late it had enlarged, until it had become of the size of a child's head. Below the tumor the skin was thinned, and ulceration was threatening. An opening, made with a fleam in the most dependent part of the growth, was followed by the escape of a stream of blood more abundant than that which is usually obtained by a similar one made at the jugular. The opening was closed with two fine sutures, the object being to obtain the obliteration of the vein and of the varice by the formation of a large clot of blood. This was realized, and the next day the soft and fluctuating tumor was replaced by a hard, painful and œdematous swelling. By local friction and other applications, this soon assumed the character of a multilocular abscess, which ulcerated, discharged and healed, leaving, after a month, only a small fibrous and painless induration, of the size of a pigeon's egg.—*Am. de Med. Vet. Belg.*

#### CONSTIPATION OF THE HORSE.

By A. COPETTE.

For five days a pony had been suffering with obstinate constipation, which had continued refractory to all forms of treatment. The author prescribed sulph. of strychnia, 25



centigrammes; chlorhydrate of morphia, 50 centigrammes; distilled water, 50 grammes, to be administered by tracheal injection. Of this, three grammes were injected in the trachea every half hour. After the third injection the colics subsided, and a stimulating rectal injection was followed by a copious evacuation of hard balls of manure. A low diet, with farinaeous drinks containing sulphate of sodie, brought on a rapid recovery.—*Ibid.*

### BIBLIOGRAPHY.

#### THE PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE.—

By PROFESSOR W. WILLIAMS.—Sixth Edition, revised by the author, assisted by his Son, W. Owens Williams, F.R.C.V.S., F.R.P.S.—New York, Sabiston & Murray, 916 Sixth Ave.

The first publication of this work some years ago, by Prof. W. Williams, has been followed, from time to time, by the issue of revised editions, in each of which he has some valuable addition and improvements to present to his readers. But we do not believe that any of his essays at amendment have proved equally valuable with those which have been embodied in this last and sixth edition, which is but just offered to American veterinarians by the house of Sabiston & Murray. This book, which now lies before us, was printed in England and appears in an unusual style of printing and binding. Though much larger than any of its predecessors, this volume contains about the same amount of material. There are, however, some few short additional articles introduced, and many of the old ones have been enlarged. But the principal improvement consists in the introduction of numerous additional illustrative plates, colored and uncolored, many of which are entirely new, and of great value in enforcing and elucidating the text.

Those which precede the chapters upon the circulation and the blood, those illustrating glanders and farcy, and last, but not least, those relating to parasites and to bacteria, form an important reinforcement of the descriptive teaching.

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half of this excellent work, which established, long since, and has amply maintained, its distinction as being the admitted standard and text book in veterinary science and practice, in English speaking countries.

**VETERINAR KALENDER.**—pro 1891. By Dr. Alois Koch, Wein.

We have received from Wein the fourteenth issue of the Kalender published by Dr. A. Koch. It is for our German brethren the equivalent of the Physician's Visiting List for practitioners on this side of the Atlantic. Well adapted to the daily requirements of the busy veterinarian, it contains many items of useful information, amongst which are not only a catalogue of most of the best German books and journals, but also a resumé of the announcements of all the veterinary schools of the world. Professor Koch is a hard worker in behalf of his profession, and has added many volumes to veterinary literature. His Encyclopedia of Veterinary Medicine, his journal, the *Revue für Thierheilkunde und Theirzischt*, stand amongst his best publications. This little Kalender will of course be a valuable help and a daily convenience to our German reading veterinarian brethren.

Some of our American writers might do a good thing by publishing a similar "Kalender" or Visiting List, in which subjects of American interest could be included, with such items and hints for reference as every man in professional life of any kind needs at times, and ought to appreciate.

**QUIZ COMPENDS.**—Equine Anatomy and Physiology. By Dr. Ballou. (P. Blakiston, Son & Co., Philadelphia, Pa.)

A nice little volume of two hundred pages, well adapted to help the veterinary student in revising his studies, and of use to the practitioner as well, to refresh his mind and quicken his memory, in the exigencies which will sometimes overtake the best of us.

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## OBITUARY.

**WILLIAM R. J. MITCHELL, D.V.S., M.R.C.V.S.**—It is with great regret that we announce the death of this worthy

member of the Alumni of the American Veterinary College, class of 1885; when he graduated second of the class. The year following his graduation he went to England, and took a post graduate course, receiving his M.R.C.V.S. in 1887. For a number of years he served as assistant to Dr. A. Lockhart, and at the death of his former preceptor entered upon the field of practice which had thus been left vacant. Doctor Mitchell had suffered for a long time with pulmonary phthisis, and at the time of his death had just reached the city of Denver, Colorado, whither he had gone with the hope of recovering his health.

### COLLEGE NEWS.

#### ALUMNI ASSOCIATION OF THE CHICAGO VETERINARY COLLEGE.

We have received the news of the reorganization of the Alumni of the Chicago Veterinary College, with a copy of the constitution and by-laws which have been adopted for the government of that body. The following gentlemen have been elected officers for the year: Dr. James N. Wright, of Chicago, President; Dr. W. Myers of Ft. Wayne, Ind., first Vice President; Dr. F. S. Schoenliber of Morris, Ills., Secretary and Treasurer. This is a good move on the part of the Chicago Alumni and we hereby proffer them our sincere wishes for the success of their new organization.

#### ONTARIO VETERINARY COLLEGE.

We have received from the worthy principal of the Toronto institution the following notice, of which our overplus of matter and lack of space has hitherto prevented the acknowledgment:

On October 22d the session of 1890-'91 of the Ontario Veterinary College was opened in the lecture hall of the new building, in presence of a large number of students and others. The introductory address was given by Dr. Duncan, Professor of Anatomy, and was most cordially received by the students. The new and spacious buildings, that were occupied for the

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first time during the course of last session, have proved to be eminently satisfactory for the purposes for which they were destined, and reflect much credit on the architect and designer. Students here from all parts of the North American continent, and even some from across the ocean, find a college well equipped in all the essentials for a thorough theoretical, as well as a practical, education in veterinary science.

The building for dissecting purposes, situated some few hundred yards from the college itself, was opened the first week in October, many senior students wishing to begin dissecting before the lectures commenced. This building, also, in all its requirements, including water service, drainage, ventilation and warmth, can scarcely be excelled.

#### BALTIMORE VETERINARY COLLEGE.

The news of the closing of that young institution reached us through private correspondence, which said: "The Baltimore Veterinary College has collapsed, Prof. Faville having resigned, and the chair of Dr. Ward declared vacant."

#### NOTICE.

*To the Members of the United States Veterinary Medical Association.*

The President has made the following appointments as Resident State and Corresponding Secretaries:

##### RESIDENT STATE SECRETARIES, 1890-1891.

California.....	Dr. Ward B. Rowland, Pasadena.
Connecticut.....	Dr. Harrison Whitney, Norwalk.
South Dakota.....	Dr. C. A. Cary, Brookings.
Delaware.....	Dr. H. P. Eves, Wilmington.
District of Columbia.....	Dr. E. S. Walmer, 3222 M St., Georgetown.
Georgia.....	Dr. August Jasme, Atlanta.
Indiana.....	Dr. A. J. Thompson, Evansville.
Illinois.....	Dr. C. E. Hollingsworth, La Salle.
Iowa.....	Dr. S. Stewart, Council Bluffs.
Kansas.....	Dr. D. Lemay, Fort Riley.
Kentucky.....	Dr. James L. Kidd, Lexington.
Indian Territory.....	Dr. Gerald E. Griffin, Fort Reno.
Maine.....	Dr. F. W. Huntington, Woodford.
Massachusetts.....	Dr. L. H. Howard, Boston.
Michigan.....	Dr. E. A. A. Grange, Lansing.
Minnesota.....	Dr. R. Price, St. Paul.

Montana.....	Dr. M. A. Piche, Fort Custer.
Missouri.....	Dr. John S. Meyer, St. Joseph.
Maryland.....	Dr. A. M. Clement, 211 St. Paul St., Baltimore.
New Jersey.....	Dr. Wm. H. Lowe, Paterson.
New Hampshire.....	Dr. W. T. Russell, Nashua.
Ohio.....	Dr. Wm. R. Howe, Dayton.
New York.....	Dr. S. K. Johnson, 117 W. 25th St., N. Y. City.
Oklahoma Territory.....	Dr. C. D. McMurdo, Fort Sill.
Pennsylvania.....	Dr. W. S. Kooker, 457 N. Fourth St., Philadelphia.
Rhode Island....	Dr. Jas A. McLaughlin, 1 Watermann St., Providence.
South Carolina.....	Dr. N. McInnes, Charleston.
Tennessee.....	Dr. J. W. Schiebler, 312 Second St., Memphis.
Vermont.....	Dr. I. F. Page, Manchester.
Virginia.....	Dr. John A. Myers, Harrisonburg.
Wisconsin.....	Dr. V. T. Atkinson, 563 Milwaukee St., Milwaukee.
Wyoming.....	Dr. Alexander Plummer, Mammoth Hot Springs.

## FOREIGN CORRESPONDING SECRETARIES.

Japan.....	Dr. Hara Taha Yokura, Komaba, Tokio.
New Brunswick.....	Dr. J. H. Frinck, St. Johns.
Ontario.....	Dr. G. Grimshaw, Kingston.

As the duties of General Secretary have become so multiplied and onerous, it is desirous that in the future all committees and members of the profession desiring information or other matter pertaining to the Association, will apply for the same through these Assistant Secretaries. All those desiring to become members of the Association are recommended to apply through their respective State Secretaries, as the approval of their credentials will greatly facilitate the work of the Comitia Minora. Blank applications for membership will hereafter be furnished and must be properly filled and filed before an applicant's name can be considered. All future certificates of the Association will only be granted after the member-elect has filled and filed certificate of his willingness to sign and uphold the Constitution and By-Laws, a copy of which will be mailed with each certificate, that the members may become fully aware of the requirements of the Association.

It is earnestly desired that all members-elect who have not qualified, will do so on or before January 15th, 1891, as the new list of officers, committees and members will be placed in the hands of the printer at that date. Notice is given that no names will be placed in the list of qualified members, except those who have complied with the requirements of membership.

W. HORACE HOSKINS, *Secretary*,

RUSH S. HUIDEKOPER, *President*.

12 South 37th St., Philadelphia.

## SOCIETY MEETINGS.

## IOWA STATE VETERINARY MEDICAL ASSOCIATION.

## FIRST DAY.

The regular annual meeting was called to order at Des Moines, Ia., at 10 A.M., November 13, 1890. Dr. L. A. Thomas was made President *pro tem*, the President and Vice-Presidents being absent.

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Members present were, Drs. Thomas, Morse, Inger, R. C. Sayers, E. E. Sayers, Campbell, S. H. Johnson, M. E. Johnson, G. A. Johnson, Bown, Owens, Stalker, Howell, Lawson, Buffington, Thurtle, Stewart. Guests: Drs. Edwards, Nelson, J. W. Williams, Fuller, Simcoke, Stark, Hall, Booth, Ashworth, Platt, Brown, Norton, Derwent, Reynolds, Gibson, Emery and W. L. Williams of Bloomington, Ill.

The minutes of the last meeting were read and approved; other routine business was transacted.

Dr. J. A. Campbell was present at the hour appointed, to explain the charge of unprofessional conduct filed and recorded at a previous meeting. The Secretary read the charge and Dr. Campbell denied being the author of the printed article upon which the charge was based. He claimed that his name was signed to the article without his knowledge or consent. The sequence of this explanation was the adoption of the following resolution offered by S. H. Johnson and seconded by G. A. Johnson.

*Resolved.*—If J. A. Campbell will publish in the *Iowa Homestead*, over his signature, a statement that he did not authorize the use of his name in connection with the printed article upon which the charge was based, and will file with the Secretary a statement from Chamberlain & Co. to the same effect; that Dr. Campbell be exonerated from the charge.

#### AFTERNOON SESSION.

Association was called to order at 1 P.M.

The Secretary read several communications from absent members, also a letter from W. Horace Hoskins, Secretary of the United States Veterinary Medical Association, calling especial attention to ethics, and a letter from Prof. A. Liautard, making propositions to furnish reprints of our proceedings and papers.

Ethics was discussed at some length, when a motion by the Secretary, duly seconded, creating a committee to present a specific Code of Ethics for consideration, was carried. Drs. Morse, Stalker and Stewart were appointed such committee.

A motion duly seconded to accept the offer of Prof. A. Liautard to supply our society with reprints of our proceedings and papers, was adopted.

R. C. Sayers and T. A. Bown were named to fill vacancies in the Board of Censors.

S. H. Johnson, H. Owens and J. D. Ingar were appointed Auditing Committee to examine the Treasurer's books.

The Association adjourned, to meet at Dr. Morse's Infirmary, where several interesting cases were seen and clinical demonstrations witnessed by the members.

Among the cases was a mare which had suffered laceration of the perineum, but was now completely healed, an excellent result having been obtained by surgical interference; a case of odontal tumors in a four-year-old gelding; bur-sattie in a stallion; rapid anæsthesia by the use of a Carlisle muzzle was demonstrated, and the details of its use and management explained by Dr. Thomas. Dr. Morse exhibited the good qualities of an operating table recently obtained.

#### EVENING SESSION.

The Board of Censors reported favorably upon all application for membership submitted to them and the report was received.

Moved by T. A. Bown, seconded by G. A. Johnson, that the Secretary cast the ballot of this Association for each of the applicants found worthy of membership. Carried.

Secretary :—Pursuant to the instruction by this Association I cast the ballot of this Association for each of the applicants for membership, and the following named gentlemen have been duly elected members of this Association :

F. H. P. Edwards, Iowa City; J. W. Williams, Glenwood; J. O. Simcoke, Stuart; E. T. Hall, Knoxville; C. A. Ashworth, Ashawa; John E. Brown, Oskaloosa; A. E. Derwent, Waverly; J. I. Gibson, Denison; R. R. Hammond, Le Mars; John McBirney, Charles City; S. B. Nelson, Ames; Q. C. Fuller, Des Moines; J. M. Stark, Fort Dodge; L. E. Booth, Corydon; J. H. Platt, Montezuma; J. C. Norton, Wilton; M. H. Reynolds, Des Moines; J. J. McGlaughlin, Webster City; Jas. Hansen, Clarinda.

Dr. Stewart, Chairman of the Committee on Collective Statistics, submitted the following report :

Letters were addressed to the other members appointed on this committee by its Chairman, requesting an expression of their notions as to the best methods to pursue in the accomplishment of the purposes for which this committee was created. The letters did not return, neither did replies to them. After some weeks of delay, the Chairman of this committee concluded to shoulder all responsibility in this matter and had a quantity of blank forms, entitled "Notes on Heredity," printed and distributed by mail to all the members of this Association. Only one bundle of blanks returned, hence the conclusion that all the members but one had received them. On the back of these blank forms was printed this letter :

COUNCIL BLUFFS, IOWA, Jan. 1, 1890.

*Dear Doctor.*—At the last meeting of our Association a resolution was adopted creating a committee on collective statistics, for the special purpose of securing the co-operation of all the members in the collection of reliably observed facts concerning heredity of disease and habit among domestic animals. In furtherance of that object, these blanks are issued, trusting that you will interest yourself in this work, making as complete notes as possible of such cases as fall to your care or notice. Preserve these notes, subject to the call of the committee, who are expected to collect and classify them into a report to be presented at the next annual meeting.

Faternally,

S. STEWART,

*Chairman Com. Coll. Statistics.*

About October 1st the call was issued to the members for the notes which it was supposed they had filled out and laid away carefully in some pigeon hole of their desks. Five interested members collected the facts and returned to your committee notes of fifty cases. Some five or six others sent letters expressing their regrets for not having any notes to contribute, and assigning reason for their delinquencies. From the remainder of our membership nothing has been received to indicate the slightest interest in this subject, which is of no inconsiderable importance to us as veterinarians who are called upon so often for opinions and advice by our employers.

This display of negligence or lack of interest in this subject on the part of the majority of our membership is made away with if every member will resolve to do something in this line during the next year; will carefully inquire into a

few cases, and will have at least a dozen notes to send the committee when the next call is issued.

Of the notes received twenty-two were cases of specific ophthalmia, fifteen ringbone, twelve spavin, five cribbing and three kicking. In the twenty-two cases of ophthalmia the average age at which the disease developed was five years. In one case it developed during the first year of life, while in others it appeared after the ninth year was reached. Sex does not appear to be a predisposing factor, there being twelve males and ten females. 70 per cent. were bay, leaving only 30 per cent. for greys, browns and blacks. One was a hambletonian mare, two percheron stallions, eleven grade percherons, two grade clydes, six unclassified. This malady affected the sires of five, the dams of seven, and the grand-dam of one. Three notes stated that other offspring of the given sire were subjects of this disease, and in the case of one stallion reported, several of his colts developed ophthalmia. In five cases both sire and dam had sound eyes. In six notes no history was obtained.

It is very evident that specific ophthalmia is a very prevalent trouble in Iowa, and no practitioner is lacking in opportunity to secure a definite history of several cases each year. The cases where the ancestry are known to never have suffered from this disease are just as important in the collection of statistics as are those with an opposite history, for it must be remembered that we must not be prejudiced in favor of the theory of heredity by preconceived opinions. It is ours to gather the facts and deduce our opinions from these facts.

Of the fifteen cases of ringbone neither sex, color nor breed seem to be factors of importance in the cases reported. The age at which it is developed extends from the first to the eighth year. Three cases were under two years old, two were two years old, four three years old and the others were six, seven and eight. In one case its sire had ringbone, in another the dam was afflicted. Out of nine colts from a mare which had two ringbones on the posterior limbs, and navicular disease in her front feet, all the colts living to be five years old became diseased. Three had specific ophthalmia, two had spavin, one navicular arthritis and one had rickets.

One hambletonian stallion possessing a ringbone sired at least two colts which developed a spavin. In four cases neither sire nor dam had ringbone. In the other no history was given.

There were twelve cases of spavin reported, of which ten were males and 12 were females. Eight were bay, two grey, one black and one roan. Three were percherons, two were trotting bred, the remainder not specified. Only one developed the disease at two years, three at three years, three at four years and one each at five, six, seven, eight and ten. The dam of one mare was spavined. One hambletonian stallion was sired by a horse having faulty conformation of the hocks, and he developed spavin when four years old. Many of his colts have developed spavin, also had curby hocks.

Five cribbers are noted, three males and two females; two percheron, one hambletonian, two unknown. This habit developed in one at the age of twenty-one months, two when three years old, in one at four, the other not given. The dams of two were cribbers. One cribbing percheron was sired by a cribber, and she foaled two colts which acquired the same habit, making a record of three

generations of cribbers. The three notes on kicking contain too little history to merit remark.

Dr. Morse: I must admit my negligence to give this subject proper attention, and am surprised that the few notes sent in should contain so much of practical interest. It shall receive my earnest co-operation in the future.

Dr. G. A. Johnson: I found it so very difficult to get a truthful history of cases, that I cast the scheme aside, but I shall be more persistent hereafter, and have some reports for the next call.

Dr. Stalker: I am really interested in this brief report of a few cases, and as this phase of investigation is far-reaching in its importance, I hope every member will interest himself in this work.

Dr. Brown: I doubt the heredity of spavin. I think it depends on the shape of the leg and lack of care of the foot.

Dr. Campbell related the history of a locally well-known trotting stallion kept in Des Moines for several years. The stallion had curby hocks and a large number of his get, owned now in and about that city, are subjects of curb, spavin, ringbone and allied troubles.

Dr. Booth thought the tendency to umbilical hernia in foals was hereditary, and cited several cases. Others related the histories of cases, evidencing the fact of hereditary tendency to disease.

Dr. Stewart: Gentlemen, it is clear to me that there is plenty of evidence to be had to establish definite notions on the subjects under consideration, and I hope you will place your observations in a tangible form, by using the notes on heredity sent you by the committee.

The committee was continued another year.

Prof. Stalker's paper was advanced on the programme, because he could not remain for the second day. The subject "Cystic Calculi and the operative procedure for its removal," was clearly presented and illustrated by several specimens removed. J. D. Ingar also exhibited specimens. This paper was discussed to a considerable length, after which the Association adjourned to the banquet hall of the Savery House and acquitted itself after the usual fashion on such occasions. Prof. M. Stalker proved himself an accomplished toast-master, and the whole programme was highly enjoyed by all.

#### SECOND DAY.—MORNING SESSION.

The Association was called to order by Dr. Thomas, President *pro tem*.

The Auditing Committee found the Treasurer's accounts correct.

Moved by G. A. Johnson, and duly seconded, that we tender a vote of thanks to Prof. A. Liautard for the extra number of the *VETERINARY REVIEW*, which contains so complete a report of the Chicago meeting of the United States Veterinary Medical Association. Carried by unanimous vote.

The following report of the Committee on Legislation was submitted;

DES MOINES, IOWA, NOV. 13th, 1890.

To the President and Members of the Iowa State Veterinary Medical Association.

GENTLEMEN.—Your Committee on Legislation reports as follows:

In order to simplify matters, and with the view of obtaining a correct idea from the members of the profession, in regard to the subject of legislation for

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the purpose of regulating the practice of veterinary medicine and surgery in this State, it was resolved by the committee, that we should draft a bill for the purpose of discussion, and that a copy of the same, together with a circular letter, should be forwarded to each qualified practitioner in this State, with the request that he would consider the subject and favor us with an expression of his opinion, or himself draft a bill and forward the same to the committee.

At the time of the canvass there were in all sixty-seven qualified practitioners in the State, and out of that number thirty-six reported by answering the questions submitted in the circular and one by drafting a bill.

The answers received by the committee are as follows: Thirty-eight in favor of legislation; two not in favor of legislation; four in favor of a five years' practice to entitle to register; thirty-five in favor of an examination to entitle to register; four in favor of including castration and spaying under the head of veterinary surgery; thirty-five not in favor of including castration and spaying under the head of veterinary surgery; thirty-eight in favor of presenting a bill to the Legislature; two not in favor of presenting a bill to the Legislature.

Upon consideration of the foregoing opinions from the profession, your committee respectfully recommend that steps be taken toward obtaining such legislation as will meet the requirements of the profession, and raise the standard of veterinary science in the State to the sphere to which it rightfully belongs, and thereby protect the public from the many impositions now practiced upon them by numerous unskilled and incompetent persons styling themselves veterinary surgeons. It is further recommended that a bill be drafted between this and the next regular meeting of the Association, and that such bill be then presented to the members of the Association for their approval.

In regard to ways and means, your committee report as follows:

In view of the fact that at the present time only about fifty counties in the State have a qualified veterinarian, we recommend that a complete list be made of all towns in the State which are unprovided with a qualified practitioner, with the view of assisting new graduates to find good locations, and that a circular be addressed to all the veterinary colleges in the United States, requesting prospective graduates to correspond with this Association. By this method in the course of two years there will be a sufficient number of qualified practitioners in every county in the State, which fact alone will remove one of the greatest obstacles to the enacting of a veterinary law. We further recommend the appointment of a committee of five, one from each section of the State, who shall be required to attend the meetings of all live stock associations and farmers' institutes, each member of said committee to attend the meeting held in his own district, and present an address on the subject of veterinary legislation and use every honest endeavor to gain their support and co-operation in the matter.

In order to meet the necessary expense which will be incurred, we recommend that the members of the Association consent to be assessed the sum of \$5.00 each, which together with any voluntary subscriptions, shall be used to defray the actual expenses of those selected by the Association to carry out its instructions.

In conclusion, we are of the opinion that no State in the Union is more in need of veterinary legislation than our own State of Iowa, and that in the event



of the subject being properly presented to the stock breeders throughout the State, there is every reason to believe that we shall receive their hearty co-operation and especially so as we do not ask this in the light of protection to ourselves but for the poor dumb brutes that for years past have been compelled to submit to unnecessary pain and even cruelty inflicted upon them by ignorant, unschooled and officious empirics.

Not only will a veterinary law protect our dumb animals, but it will also benefit the stock owner to a vast extent, both by decreasing his loss from various injuries sustained by stock, and also by being a guarantee from the State that the man whom he consults is in every way competent to give him good sound advice, and that he will not be paying out good money to a person who in reality perhaps knows less of the diseases of stock than the owner himself, and yet presumes to set forth his qualifications by an experience of twenty-five or thirty years practice; and we deem legislation the best and most expedient way of raising the standard of ethics of the profession in the State.

L. R. THOMAS, }  
G. A. JOHNSON, } *Committee.*

Moved by Dr. Stewart and duly seconded, that the present committee on legislation be continued, with an addition of two members, to be named by the chairman, and they be instructed to carry out the recommendations of the report just submitted. Carried.

Dr. Morse: I was recently surprised to hear a member of a Farmers' Alliance say that his local organization had been considering the qualifications of veterinary practitioners offering their services in his alliance district and had made a list of the properly educated veterinarians.

Dr. Brown: I find the farmers in my district are giving this matter some attention.

Dr. Howell: The President of the State Farmers' Alliance recently invited me to give them an address at their next meeting on the subject of legislation.

Dr. Thomas: I think it will only be necessary to thoroughly interest the stock breeders' associations in this cause. When so interested they will see to it that proper legislation is obtained.

Dr. Johnson: I will read to you the second paragraph of Dr. Atkinson's letter in Dr. Peters' report. This is surely a discouraging report from Wisconsin. I am in favor of an ironclad law. If the law is properly framed it will work much good to the State of Iowa.

Dr. Stewart: I would also call your attention to the report of Dr. Peters, made to the United States Veterinary Medical Association in Chicago, and more especially to his conclusions after much patient study of this subject. (Dr. Peters' conclusions were read). These conclusions are worthy of your thoughtful consideration before any legislation is attempted. The trouble with the laws in the various States governing the practice of medical science is the inadequacy of the enforcement and penalty clauses.

The President, Tait Butler, finding it impossible to be present at this meeting, forwarded his address by mail and it was presented by the Secretary.

TO THE MEMBERS OF THE IOWA STATE VETERINARY MEDICAL ASSOCIATION.

*Gentlemen:*—It is customary in such Associations as ours for the President to present an annual address, making some pretensions to scientific value.

I had intended to do my utmost to comply with the demands of custom, but much other work and poor health during the past two weeks has compelled me to send you by way of apology the following fragment in the line of a few suggestions.

I sincerely regret my physical inability to be with you in person, as to me the meetings of the Iowa State Veterinary Medical Association are occasions of unusual importance and interest. Having taken part in the "labor" which "brought it forth into the world" and had some of the care of it during its infancy, I may be excused if I look upon it with feelings akin to those of a parent for a child.

The Iowa State Veterinary Medical Association justifies its existence by proclaiming as its motives "the mutual advancement of its members in veterinary science, the cultivation of fraternity and the elevation of the veterinary profession." Can any member present conceive of a more noble purpose in life than the elevation of his fellow man socially and intellectually? Certainly these are objects worth the best efforts not only of this Association but also of every individual veterinarian in Iowa.

We are honored by being permitted to claim a membership in a scientific profession; we are honored by membership in an Association which exists for a truly noble purpose, but what have we done to merit such honors? Have we during the past year given a fair share of our time and energy to the advancement of veterinary science? Let us look back at our records in this field of labor. First, what have we done in the line of literary work during the past year? The veterinary journals have received two or three articles from Iowa veterinarians, and if I mistake not but one of these related to veterinary science proper. Neither a single paper of more than ordinary scientific value, nor the discovery of a single scientific fact has gone out from our ranks. Not only have we completely failed in point of results but also in point of actual efforts.

Again, what have we done to cultivate a spirit of professional fraternity? Did we avail ourselves of the best opportunity in this field of work that has ever been offered in the history of our profession in America? I refer to the recent meeting of the United States Veterinary Medical Association, held, as it were, at our very doors, and am compelled to admit with chagrin that only four Iowa veterinarians were in attendance. Is not this fact a sad reflection on our professional loyalty and devotion to science? Is it not a stain upon our reputation as progressive veterinarians that even time itself cannot efface?

This, gentlemen, is a true statement of the showing we have made under the most favorable circumstances. If our opportunities had been less brilliant it is not difficult to conceive the still more insignificant showing we must have made. I repeat that our opportunities have been brilliant, for never before in the history of our journals and associations has such an effort been made to stimulate literary and scientific work. There are but few veterinarians in Iowa who have not been solicited to write for one or the other of our veterinary journals, and as to the recent meeting of the United States Veterinary Medical Association in Chicago, all were duly notified of the exact date and place of the same. Many were invited by personal letter to attend, while others were begged to lend the influence of their presence. Yet, what has been the result? The personal and professional interests of many Iowa veterinarians were involved in the re-

sults of this meeting, and yet of all this class but one possessed sufficient energy and professional enthusiasm to induce him to sacrifice a few paltry dollars and less time. When self-interest is added to professional interest and yet the combination fails to arouse even a spark of enthusiasm, the prospects are certainly not bright. We have men in Iowa who by their ability, professional standing and other resources are well fitted to take an active part in the advancement of our profession, but I regret to say that when their services are most needed they are too often not at their post of duty.

Let us discontinue these pessimistic reflections and turn our attention from what has not been done to what may be accomplished if a little interest be taken in matters of importance to the profession in general.

First, what can we do to aid our veterinary journals? Our first duty is to become subscribers for them. Let me urge the absolute necessity of this course and if possible that each member of this Association also subscribe for the *London Veterinary Journal* and one of the leading journals of human medicine. To accomplish this end, two methods appear feasible. One is for the Association to subscribe for as many numbers of each journal as it has members in good standing and add the price to the annual dues of each member. In this way a reduction in price might be secured. The other method is to appoint a committee of three to solicit subscriptions from all the regular graduates in the State. The former method appears to me practicable and at the same time more effective than the latter.

This may seem an unusual course, but the case is a desperate one. Not more than half of the regular veterinarians in Iowa subscribe for any medical journal. Therefore I ask that one of these methods be adopted, not alone in the interest of the journals but particularly for the benefit of my colleagues and myself. We can no more afford to be without our medical journals than politicians without their daily newspapers.

Our second duty to the veterinary journals is to write for them. I am aware that all are not competent to do this with advantage to the journals, but we have at least a dozen veterinarians in Iowa who are competent to write papers of interest and value if they would but devote the requisite time and energy to this particular class of work. I would therefore suggest that this Association, through its President and Secretary or a special committee of three, attempt to furnish six papers to each of the two veterinary journals in this country, during the coming year. I don't mean papers hurriedly and carelessly prepared, with only the object of filling up so much space, but papers carefully written only after a most thorough research and practical experience in the particular field chosen. This can be accomplished to the credit of our Association and the profit of our journals and the profession at large, if all will but do their duty.

After one more suggestion I will conclude this brief address.

Professor Liantard, editor of the *AMERICAN VETERINARY REVIEW*, has offered to reprint in pamphlet form, from a full account of the proceedings of this meeting furnished for publication in his journal, as many copies of the same as we may desire for distribution among our members, at a merely nominal price, not to exceed actual cost of production. I would respectfully suggest that the Secretary be instructed to obtain as complete and accurate an account of the proceedings of this meeting as possible, and together with the papers read, send it to Prof

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Liautard with an order for as many copies of the same as the Association may deem required.

Thanking you for the courtesy shown me during my term of office, wishing you a pleasant and profitable meeting and expressing a bright hope in the future prosperity and usefulness of our Association, I remain,

Yours fraternally,

REYNOLDS, ILL., Nov. 13, 1890.

TAIT BUTLER.

Dr. Brown : I am very much interested in Dr. Butler's statements. I think we ought all to be subscribers and readers of the journals.

Dr. G. A. Johnson : It seems to me the journals are so scientific that the ordinary member of the profession is discouraged from sending practical papers for publication.

Dr. W. L. Williams : The intensely scientific articles are printed in such excess of more practical interest because the practical papers cannot be obtained and the columns of the journals must be occupied. I do not know of any instance of a refusal to publish any practical contribution sent them.

Dr. Johnson : I was solicited for a paper read by me before this Society last year. I forwarded the paper, but it has not been published as yet.

Dr. Derwent : I sent a report of a, to me, interesting case to one of the journals, which was promptly published.

Dr. Morse : I very much admire the high tone of our journals. Let us help to maintain the high plane which they occupy and get upon that level ourselves. Our practical papers can be scientific.

Dr. Johnson : Who as practitioners care to read about the anatomy of wild fowls and monkeys, and long-drawn-out articles on tuberculosis in birds.

Dr. Williams : It occurs to me that all articles on tuberculosis, even in birds, are worthy of our perusal since this disease is found to be so widely distributed throughout the animal kingdom ; then if the reader does not feel any interest in some special articles published, he can omit them ; others may enjoy and appreciate them.

Dr. Stewart : I am satisfied that any paper prepared with reasonable care by any member of this Association will be quite sure of publication if it reaches the editorial office. The management of our journals are very glad to receive contributions and reports of cases, and will be pleased to increase the space allotted to this class of material if the supply is abundant. So I would suggest that you lay aside any hesitation you may have in this matter and send reports of your cases to the journals. Dr. Butler's address cannot be considered as flattering us as an active Association. I hope we may act upon some of his suggestions and do some work of merit this coming year. Cannot we gather the facts for several papers by co-operative observation and study ? I think we can.

Dr. Williams explained a plan whereby the Society as a whole could work together in the study of one subject and the construction of one paper, and offered to take the subject of osteo-porosis. On this plan Dr. G. A. Johnson will take the cornstalk disease, and Dr. Morse will take operations on the sciatic nerve for the cure of spavin. Others will be solicited.

Dr. W. L. Williams read a very valuable paper on "Odontomes," and illustrated his paper by exhibiting many specimens of the several varieties of tooth tumors.



Dr. Brown's paper on the "Uses of Electricity in Veterinary Medicine," was postponed one year by special request.

Dr. G. A. Johnson read a paper on the cornstalk disease.\*

Dr. S. B. Nelson presented a few notes of cases on the use of eserine.\*

Dr. Edwards presented a paper on a disease known by some as scrofulous ostitis\*.

These papers were discussed at considerable length by all the members.

The following officers were selected: President, L. A. Thomas; First Vice-President, A. B. Morse; Second Vice-President, G. A. Johnson; Secretary and Treasurer, S. Stewart.

Moved by A. B. Morse, seconded by M. E. Johnson, that Dr. W. L. Williams be tendered a vote of thanks for his valuable paper and be elected an honorary member of this Association. Carried by unanimous vote.

On motion a vote of thanks was tendered the proprietors of the Savory House for the use of its parlors.

On motion a vote of thanks was tendered Drs. Thomas Morse and Howell for the clinical demonstrations given the Society.

Adjourned to meet in Des Moines during the autumn of 1891, the time to be fixed by the President.

S. STEWART, *Secretary*.

#### MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of the Massachusetts Veterinary Association was held at 19 Boylston Place, Boston, Wednesday evening, November 26th, 1890, President Thomas Blackwood in the chair. The members present were Drs. Blackwood, Emerson, Ferguson, Hadcock, Howard, Marshall, Winchester, Billings and the Secretary. Honorary member—Dr. Stickney. Essayist—Dr. E. C. Becket.

Minutes of last meeting read and accepted.

There was no new business; the next in order was the reading of a paper by Dr. Becket upon "Surgical Treatment of Recto-vaginal Fistula."

The paper consisted chiefly of the notes of two cases of recto-vagina fistula treated at the Harvard Veterinary Hospital, on Village Street. The essayist said that the cause was generally parturition, and was often complicated with rupture of the perineum, including a portion of the sphincter ani. He then described the two cases referred to above; both were complicated with tear of the perineum, although one was much worse than the other. They were much benefited by treatment, the fistula being closed, but it was impossible to bring about repair of the sphincter ani in either case; consequently in going down hill the gut would fill with air until they had a bloated appearance, and this would pass off on level ground, together with more wind, rendering them disagreeable to drive. The treatment consisted in freshening the edges of the opening between the rectum and vagina and bringing them together with sutures, silver wire being mostly used. It was found best to operate by throwing the mare and then etherizing; the animal when under the influence of ether relaxed the parts and thus rendered them more accessible. The intestines should be as empty as possible before operating, and kept quiet as long as possible afterward to avoid disturbance of

\*Will be published in the February Review, having reached our office too late to be placed in this issue.



the parts by the passage of feces. Both cases required to be operated upon two or three times before success was attained, and then it was only partial on account of the torn sphincters. The essayist thought that in cases of recto-vaginal fistula where the perineum or sphincter was not injured, treatment would be successful.

The ensuing discussion followed the reading of Dr. Becket's paper.

Dr. Winchester said that he had seen a few cases of recto-vaginal fistula, but all were in mares worth from \$2.50 to \$10.00, generally in the hands of cheap traders. He had tried operating, but with very little success. He spoke of Becket in his paper writing that the wall of the fistula was treated as one tissue, while anatomically it was two; why would it not be better to try and separate the two walls and sew each one by itself? Dr. Winchester appreciated the difficulty of doing this, but why would it not be doing the work more correctly to sew the rectal and vaginal walls separately?

Dr. Howard thought that in an old lesion it would be almost impossible to separate the walls of the intestine and vagina.

Dr. Marshall moved that the essayist be accorded a vote of thanks for his paper; seconded; carried.

Moved by Dr. Winchester and seconded by Dr. Hadcock that the Secretary cast one ballot for Dr. Becket's admission as a member of the Association. Carried. Dr. Becket was accordingly elected.

Dr. Ferguson spoke of a case of deafness in a horse caused by firing a carbine close to his head. Blistering around the base of the ears was first resorted to without success, then treatment by electricity was tried, with successful results in the course of a week.

Dr. Hadcock reported a case of rabies in a horse belonging to the West End Street Railway Co. In August last a dog ran into a blacksmith's shop at Mt. Auburn and bit a dog and the horse. Both dogs were killed at the time and the horse worked as usual until within a few days, when he began to show symptoms of rabies, soon becoming very violent and dying in less than twenty-four hours of the time when the first symptoms were noticed. The horse died in just three months and sixteen days from the time he was bitten. The brain and a part of the spinal cord were removed and sent to Dr. Jackson, at the Harvard Medical School for the purpose of inoculating some rabbits, in order to confirm the diagnosis of rabies.

A general discussion of rabies followed, in which Drs. Marshall, Stickney, Winchester, Ferguson and Billings took part.

Dr. Billings said that he was very skeptical about many cases we call rabies being rabies, and said that he did not believe in the rabies of Pasteur. He said that he had no faith in Pasteur after he persisted in keeping the "Newark children" among his statistics of patients treated after being bitten by a rabid animal, when he had been informed that the dog which bit them never had rabies. He then spoke of his rabies among cattle in the West, in which he separated a germ that would again produce the disease, but it was not altogether like rabies after all. Dr. Billings will not believe in the work done on rabies until the disease is produced by inoculation in dogs, and the dogs produce the disease in other dogs by biting them. He is also very skeptical as to the value of inoculation against a disease which has always been fatal, with no history of recovery and non-occurrence.

Dr. Winchester was appointed a committee of one to attend to inviting Dr. Van Schaick, of the Pasteur Institute in New York, to be present at one of the meetings of this Association this winter, and give an address upon Rabies.

A motion was made, seconded and carried, that we omit the December meeting, as the forth Wednesday in December this year would bring the meeting on Christmas Eve.\*

Meeting then adjourned.

AUSTIN PETERS, *Secretary*.

#### LONG ISLAND VETERINARY SOCIETY.

A regular meeting of the Long Island Veterinary Society was held on Wednesday evening, December 17th, 1890, at No. 74 Adams Street, Brooklyn, the President, Dr. Geo. H. Berns, in the chair.

The following members were present: Drs. Geo. H. Berns, Geo. F. Bowers, J. F. Mustal, Philip Newman, Thos. M. Buckley, Samuel Atchison, D. S. Breslin, Wm. H. Pendry, Roscoe R. Bell, Geo. G. Vanderveer, Chas. Jamieson.

The minutes of the previous meeting were read and approved.

The Treasurer, Dr. Geo. F. Bowers, read his report for the term ending January 1st, 1891, the report showing a balance of cash on hand \$44.83.

The report was received and adopted.

The Board of Censors and the Board of Trustees had no report to make.

Dr. Wm. H. Pendry, was instructed to file the yearly report of the Society's condition in the County Clerk's Office, thus complying with the law on the subject.

The next order of business being reading of papers, Dr. Wm. H. Pendry read an interesting paper entitled "Uniform Standard of Veterinary Education." \*

An interesting discussion followed, participated in by Drs. R. R. Bell, Geo. H. Berns, J. F. Mustoe, Geo. F. Bowers, Thos. M. Buckley, and Wm. H. Pendry, after which a hearty vote of thanks was tendered the essayist.

The election of officers being next in order, the following gentlemen were elected to the various offices for the ensuing year; President, Dr. Roscoe R. Bell; 1st Vice President, Dr. Samuel Atchison; Treasurer, Dr. Geo. F. Bowers; Secretary, Dr. D. S. Breslin; Board of Censors, Drs. Geo. H. Berns, Philip Newman, H. Housman, Thos. M. Buckley, J. F. Mustoe.

Bill for typewriting, stationary and postage amounting to \$4.10 was ordered paid. A vote of thanks was unanimously tendered the retiring officers, particularly President Geo. H. Berns, for his efficient services in behalf of the Society.

The chair appointed as assayist for January meeting, Dr. Geo. G. Vanderveer.

The meeting then adjourned.

D. S. BRESLIN, D.V.S., *Secretary*.

#### INDIANA ASSOCIATION OF VETERINARY GRADUATES.

The annual meeting of this Association will take place at Indianapolis, on the 7th and 8th of January, 1891. Some interesting papers are promised.

\*Received too late for this number, but will be printed in next issue.—ED.